Gas Journal

LIGHT - HEAT - POWER - BY-PRODUCTS

Vol. 245. 97th Year. LONDON, MAY 23, 1945. Registered as a Newspaper. No. 4279. Price 1/-

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DETROIT

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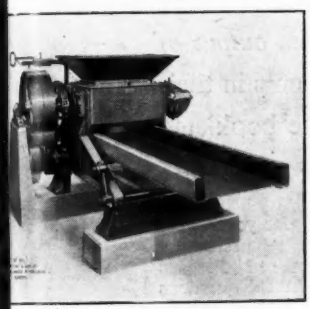
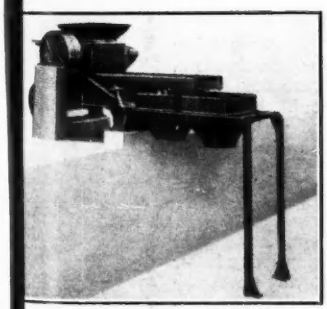
DEVOTED TO THE SERVICE OF NEW KING COKE

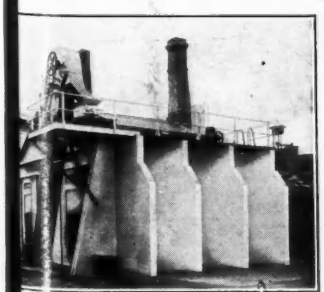
APPROACHED FOR EFFICIENCY, ACCESSIBILITY AND LOW MAINTENANCE COST.



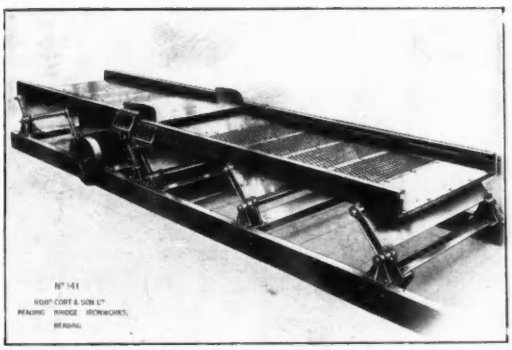
COKE CUTTING MACHINE WITH RECIPROCATING SCREEN



COKE CUTTING MACHINE SCREENING AND BAGGING UNIT

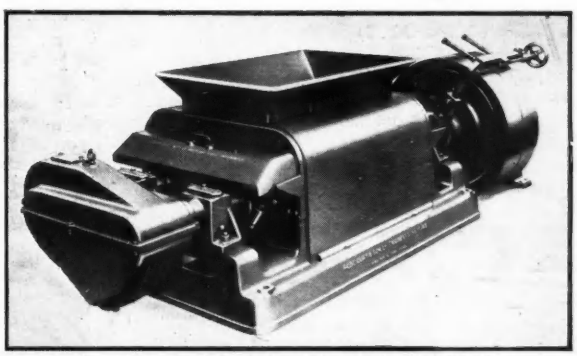


SUDBURY, SUFFOLK, 5 TONS PER HOUR



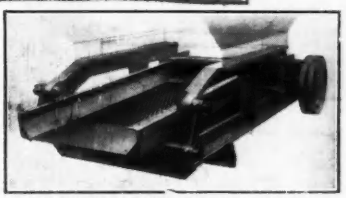
SCREENING CONVEYOR. 3 TO 75 TONS PER HOUR

SPECIALISTS in the design and supply of Handling Plant for Coke, in particular. Having served the Gas and Coke Oven Industries for over Thirty Years in this connection we are definitely in a position to submit proposals in advance of competition to meet the needs of any "make."

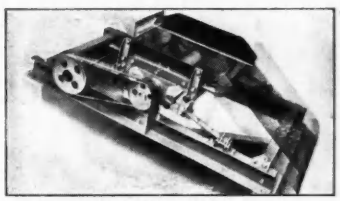


Nos. 18-21 SERIES. COKE CUTTING MACHINES

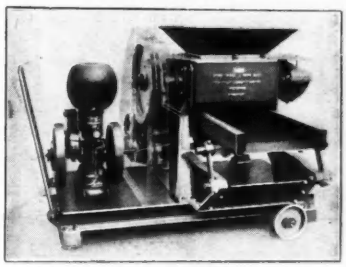
The above illustrates our latest development of *The* Coke Cutting (or Sizing) Machine—the "Heart" of all Coke Fuel Preparation Plant.



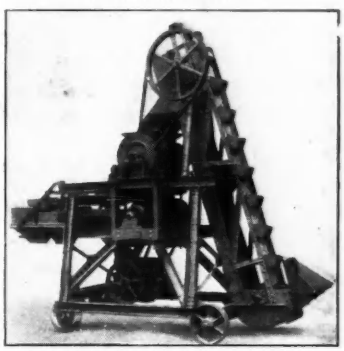
RECIPROCATING DEBREEZING SCREEN



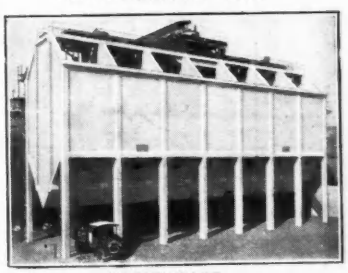
VIBRATORY SCREEN



PORTABLE COKE CUTTING AND SCREENING UNIT



PORTABLE ELEVATING CUTTING AND SCREENING UNIT



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ROBT. CORT & SON LTD., READING BRIDGE IRONWORKS, READING

More steam from your COAL

These bulletins show how it can be done

EVERY MANUFACTURER makes it his business to know what output he can aim at from each of his raw materials; but often with one exception—COAL, most vital of all industry's raw materials.

There are many managements who may be as keen as mustard in tracking down steam wastage in their plants, yet don't realise how much the *output of steam* from their coal tonnage might be increased by little improvements in their methods of steam production. How it can be done is told in these booklets:

STEAM PRODUCTION AND CONSUMPTION (*Bulletin No.* 1)

The purpose of this Bulletin is to give you a quick survey of possible improvements. You can then turn to separate Bulletins for advice on the particular aspects requiring investigation.

THE MAINTENANCE OF INDUSTRIAL BOILER PLANT (*Bulletin No.* 38)

Explains clearly where defects can occur in your boiler plant, and how to keep it in shipshape order so that it will always give the best possible performance.

THE CONTROL OF COMBUSTION AIR (*Bulletins Nos.* 10 *and* 27)

Two Bulletins which show how to reduce the flue gas loss—simply by better control of the air supply to your boilers.

COMBUSTIBLE MATERIAL IN ASHES (*Bulletin No.* 9)

A lot of good burnable stuff is thrown away with the ashes. This Bulletin tells you (*a*) how to cut down the loss and (*b*) how best to recover burnable material from the ashes.

COOLING FIREBARS IN INDUSTRIAL FURNACES AND BOILERS (*Bulletin No.* 20)

Is steam used for cooling under your boiler grates? Perhaps it isn't necessary? Perhaps too much is being used? Perhaps water will do just as well? All the questions and answers about firebar cooling are in this Bulletin.

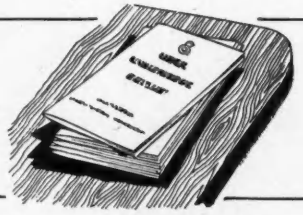
SUPERHEATED STEAM (*Bulletin No.* 16)

You may be using saturated steam when you ought to be using superheated steam. Or you may be using superheated steam when saturated steam would be better. The right answer—when and where to use and not to use superheated steam—is given in this Bulletin.

BLOW-DOWN (*Bulletin No.* 35)

Are you sure you are blowing down your boiler sufficiently to prevent priming? Or are you wasting fuel by blowing down too much? It is so easy to control the concentration of your boiler water and this Bulletin tells you all about it.

IN THESE BULLETINS you have at your finger-tips specialist information on fuel economy. Read them yourself and get the men on the job to read them too. It will be well worth while. Copies are free from your Regional Office of the Ministry of Fuel and Power.



ISSUED BY THE MINISTRY OF FUEL AND POWER

GAS JOURNAL, MAY 23, 1945

VOL. 245 97th YEAR No. 4279

Illuminating the address

WE, of the House of Sugg, look forward, to a speedy return to normal street lighting. Particularly do we look forward to the time when, with an experience gained during more than 100 years, we shall be able to tackle the task of providing the many thousands of lighting units which are so urgently required in the interest of Public Safety on the Roads. But the war has yet to be won. Meanwhile, we are unable to alter our programme for the production of the supplies that are so essential for the use of our Fighting Forces—on land, sea, and in the air. When the time comes to restore full peace-time lighting we can assure you of our full co-operation, and will render every assistance which lies within our power.

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SUGG
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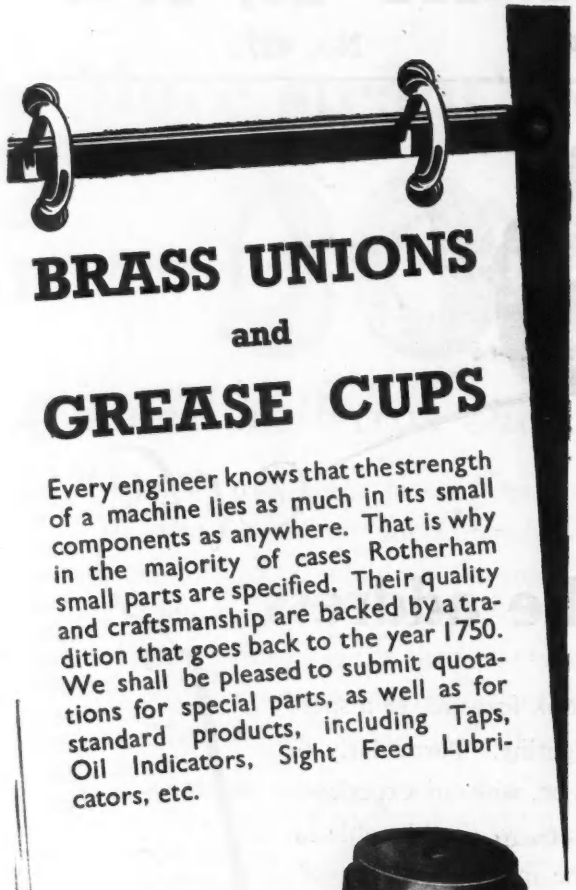
THE FIRM THAT HAS GROWN UP WITH PUBLIC LIGHTING



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May we investigate the potentialities offered for fuel-saving in *your* Works?

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CAMBRIDGE ROAD, HITCHIN, HERTS.
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More than **100** COMPLETE INSTALLATIONS supplied or on order, for the high efficiency detarring of **660** million cu. ft. of gas per day.

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127 W·W-D Electro-Detarrer gas treaters supplied or on order all incorporating this design.

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The King Electric Chain Pulley Blocks are built for continuous heavy duty. Three models available—Minor, Major, and Mammoth—ranging in capacity from 5 cwt. and 10 tons.

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ECONOMICAL IN USE AND CHEAP TO PRODUCE

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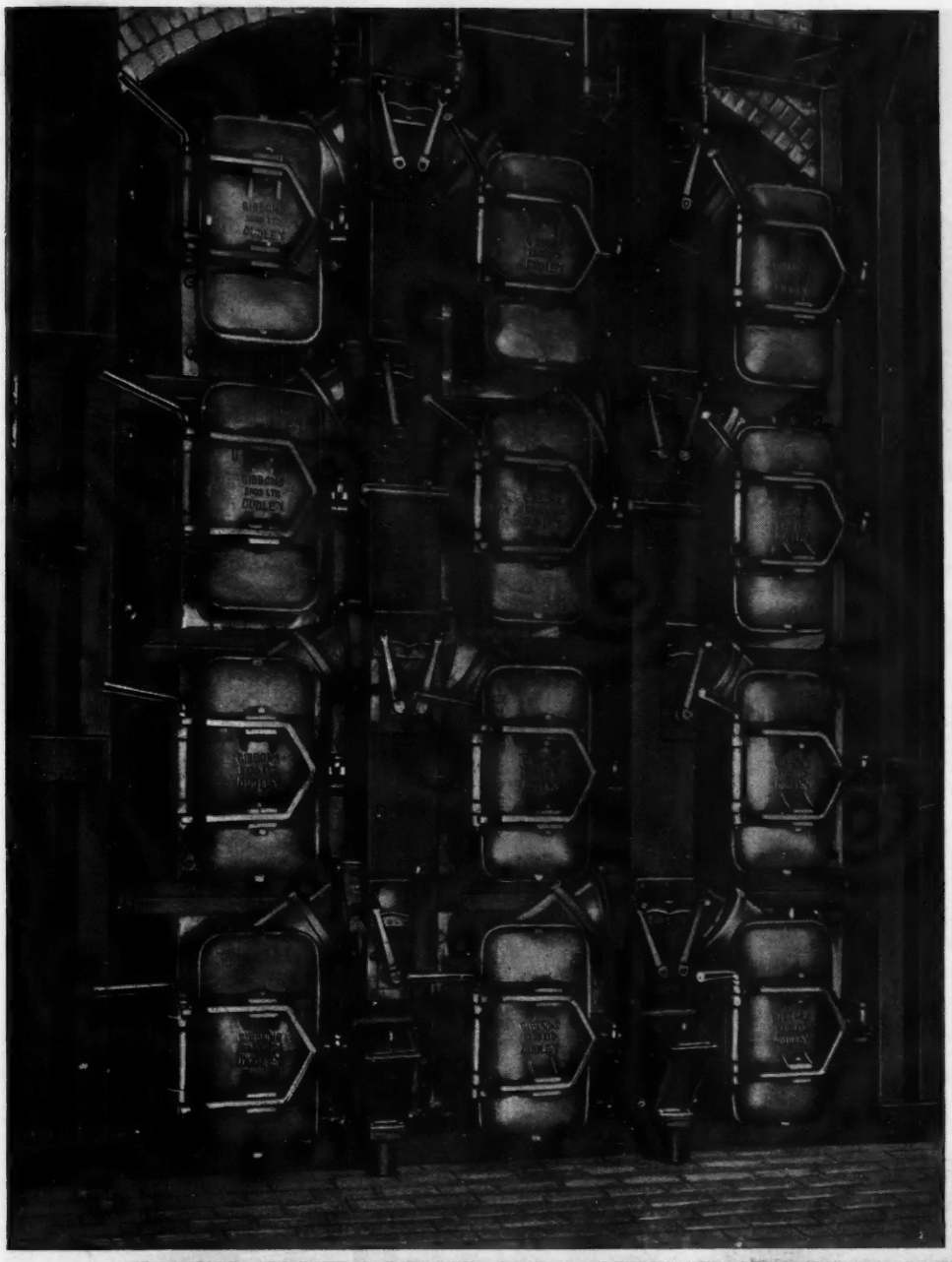

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(PATENTED)

24 tons Coal throughout per Unit of 12 Chambers/Diem.

11 cwt. Coke for sale.

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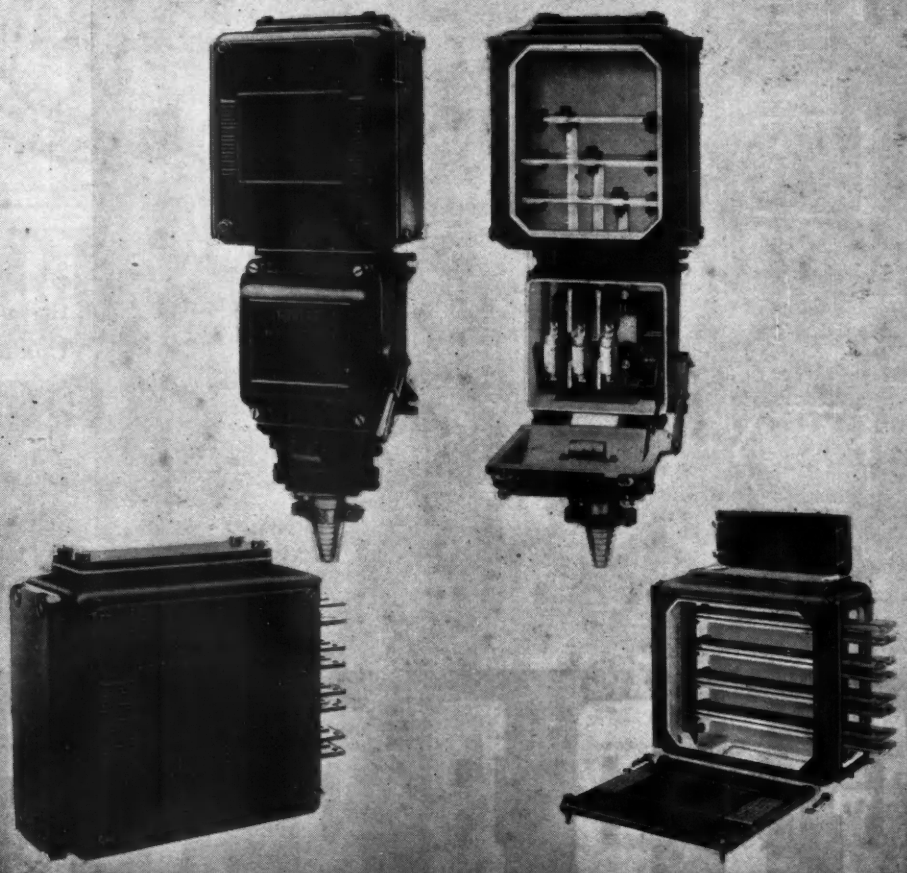
HEAVY INDUSTRIAL

SWITCHGEAR



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LEAD PIPES Chemical Compo.; Improved Tellurium-Lead Pipes specially recommended for their unique resistance to vibration, frost, corrosion, creep, friction and other strains of service.

LEAD SHEETS Guaranteed high purity Chemical Sheet Lead a speciality. Ordinary, Antimonial, Tellurium and Ternary qualities also supplied.

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PAINTS White Lead and Red Lead—as Paste Paint ground in oil and Ready Mixed for use in qualities suitable for all coats from priming to finishing. Also supplied Tinted.

Restrictions on the use of Lead for new and repaired building work have been withdrawn, and Sheets, Pipes, Flashing, Traps, Bends, etc., can now be used for this purpose.

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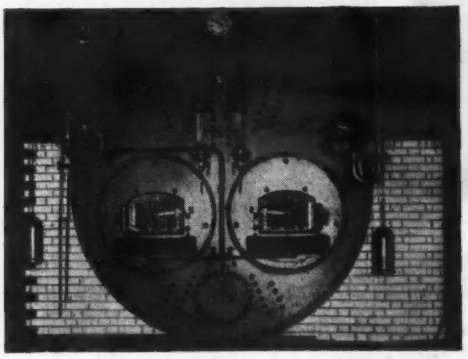
FORCED Wilton DRAUGHT FURNACES

STEAM JET



AIR FAN

EXISTING STEAM JET FURNACES CAN BE EASILY CONVERTED TO FAN DRAUGHT

LOWER INITIAL COST

LOWER WORKING COST

Particulars of Saving on application

THE CHEMICAL ENGINEERING & WILTON'S PATENT FURNACE CO., LTD., HORSHAM, SUSSEX

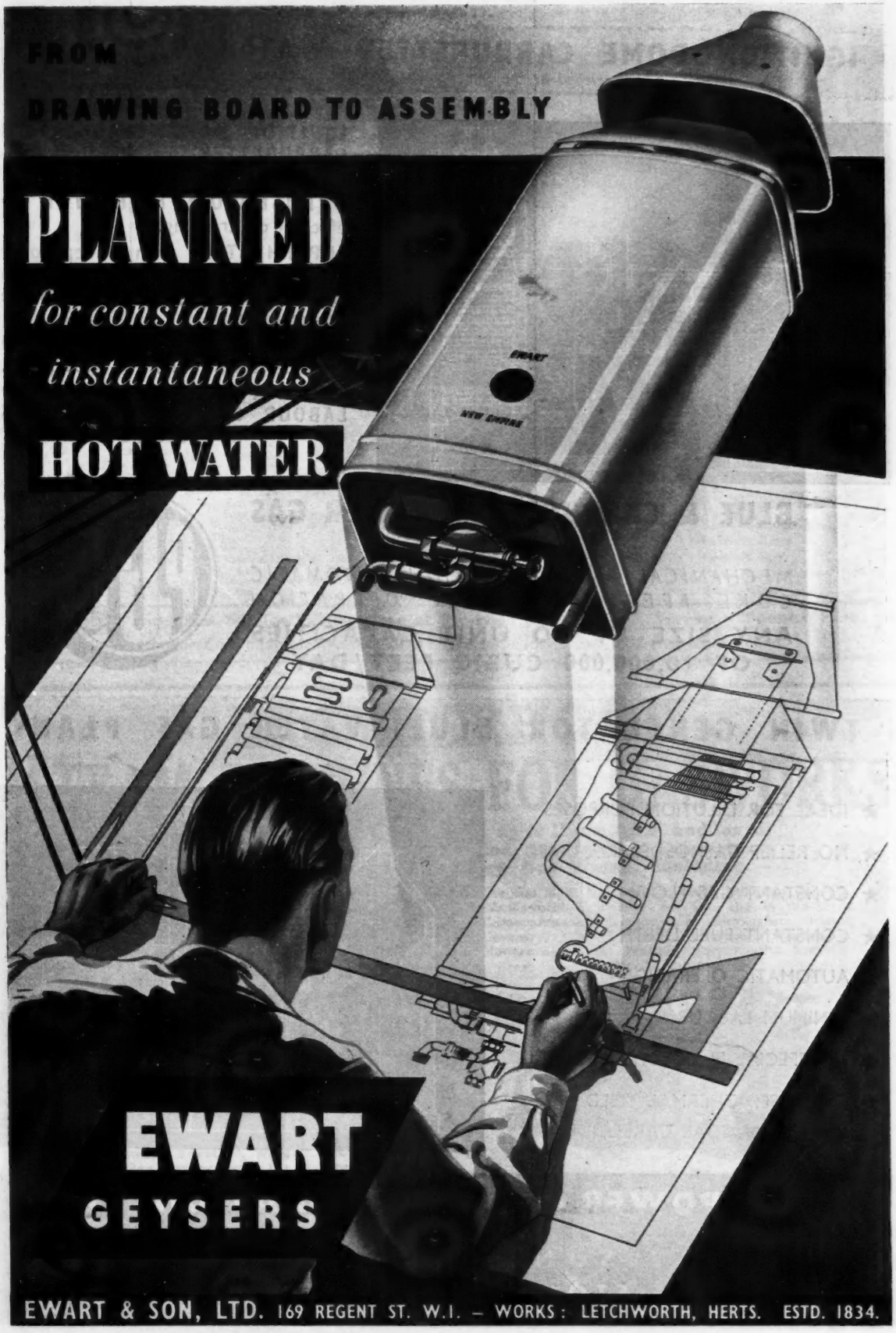
View of the ROYAL HOSPITAL, CHELSEA, with the Rotunda at RANELAGH GARDENS

In the more leisurely days of the 17th and 18th centuries the Thames was a populous highway, and the numerous boats and barges, some with built-in cabins resembling gondolas, must have presented a gay and animated appearance. On one visit by King George I. to Ranelagh House, the royal barges were accompanied by hundreds of illuminated boats, while in one of the City barges Handel conducted his well-known 'Water Music' with an orchestra of 50 performers, greatly to the King's pleasure.

From a print in the possession of

GEORGE GLOVERS of CHELSEA

Makers of Ranelagh Meters



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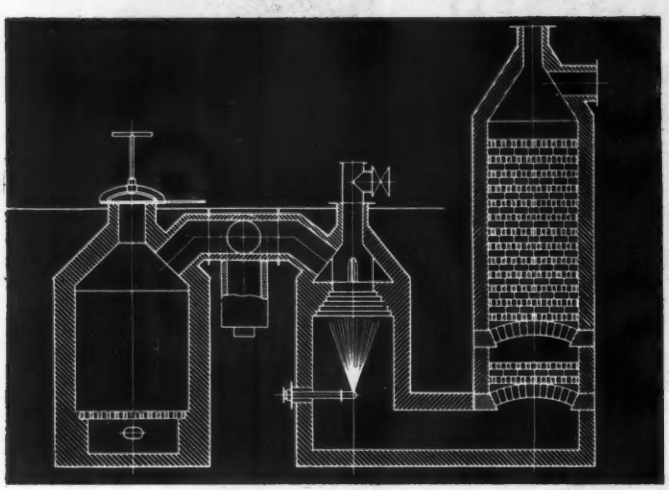
IGNITION DOME CARBURETTED WATER GAS PLANT

(As developed by the Semet-Solvay Engineering Corporation)



IGNITION DOME CHEQUERLESS CARBURETTER for effective combustion and freedom from blockage.

OPPOSED OIL INJECTION for efficient oil cracking.

SUPERHEATER with independent support of lower section chequers to facilitate cleaning and maintenance replacements.

CONE TOPPED VESSELS for stability, accessibility and cleanliness.

AUTOMATIC OPERATION for LABOUR ECONOMY & PROCESS EFFICIENCY

BLUE & CARBURETTED WATER GAS PLANT

MECHANICAL ASH EXTRACTION, AUTOMATIC COKE FEED, AUTOMATIC OPERATION

ANY SIZE UP TO UNIT CAPACITIES OF 10,000,000 CUBIC FEET/DAY

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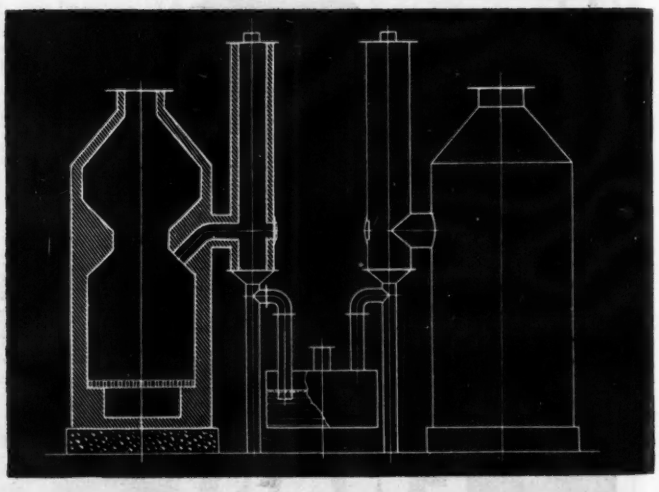
TWIN GENERATOR BLUE WATER GAS PLANT

★ IDEAL FOR DILUTION PURPOSES
★ NO RELIEF GASHOLDER REQUIRED
★ CONSTANT GAS FLOW
★ CONSTANT FUEL DEPTH
★ AUTOMATIC OPERATION
★ MINIMUM LABOUR
★ NO SPECIAL PLANT ATTENDANT
★ INCREASED THERMAL YIELD PER TON COAL CARBONISED



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The "Journal" and "Gas Service" Offices are at 51, High Street, Esher, Surrey. 'Phone: Esher 1142.
Communications addressed to Bolt Court have to be forwarded, and this causes delay.

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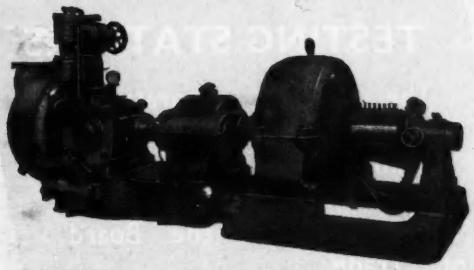
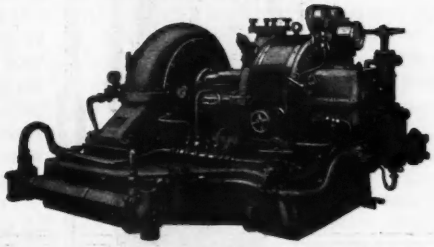
STEAM TURBINES FOR GASWORKS

Our Turbines, made for all powers up to 15,000 B.H.P. and for all conditions of service, are installed for driving Exhausters, Boosters, and Generators in many Gas Works, including:—

The Gas Light & Coke Co., South Suburban Gas Co., Wandsworth & District Gas Co., and in Works of Corporations and Companies at—Birmingham, Bristol, Coventry, Cardiff, Exeter, Liverpool, Manchester, Newcastle-on-Tyne, Preston, Portsmouth, Sheffield, Smethwick, Toronto, etc.



300 kW Back Pressure Geared Turbo-Generator.



Exhauster driven by 150 B.H.P. Steam Turbine at 13,000 r.p.m.

Brotherhood plant for Gas Works also includes Reciprocating Boosters, Water Cooling Towers, Air and Gas Compressors for all pressures and capacities.

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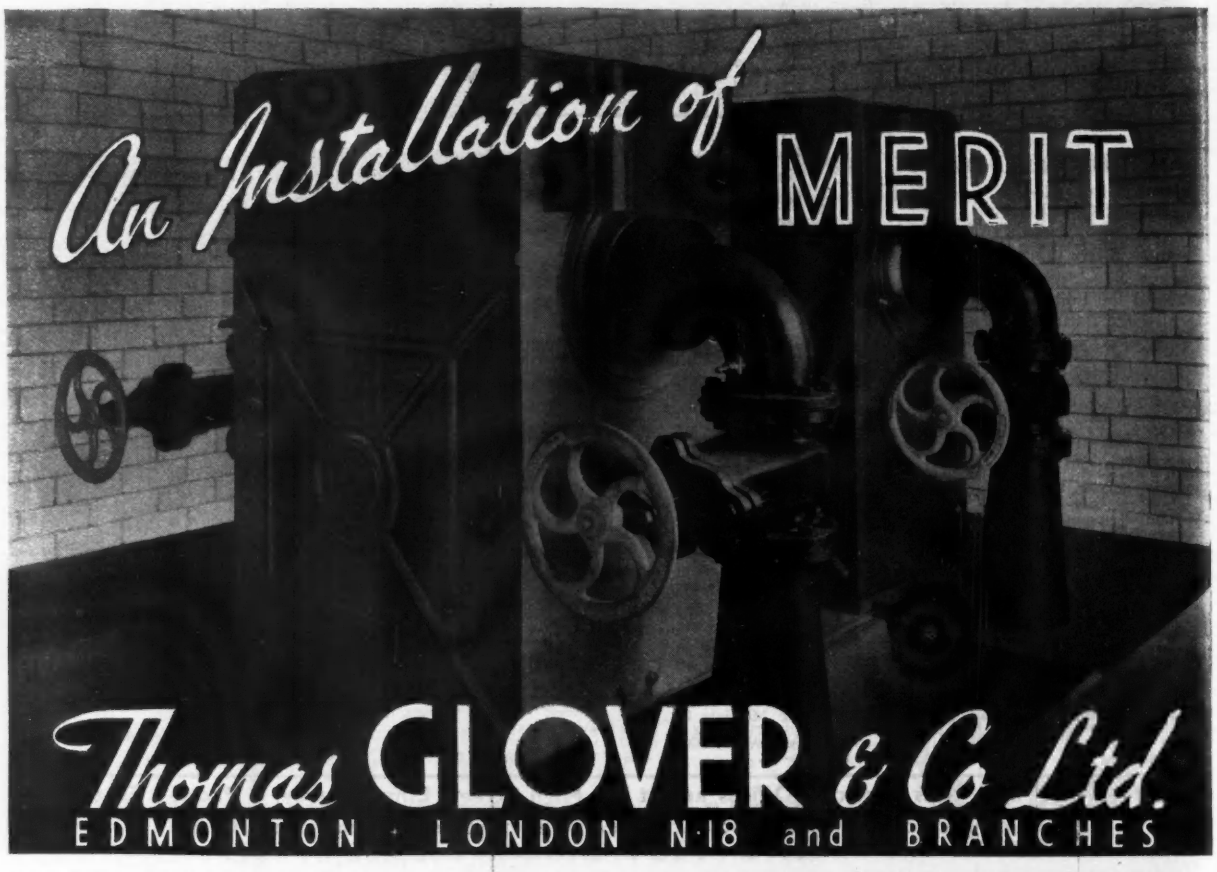

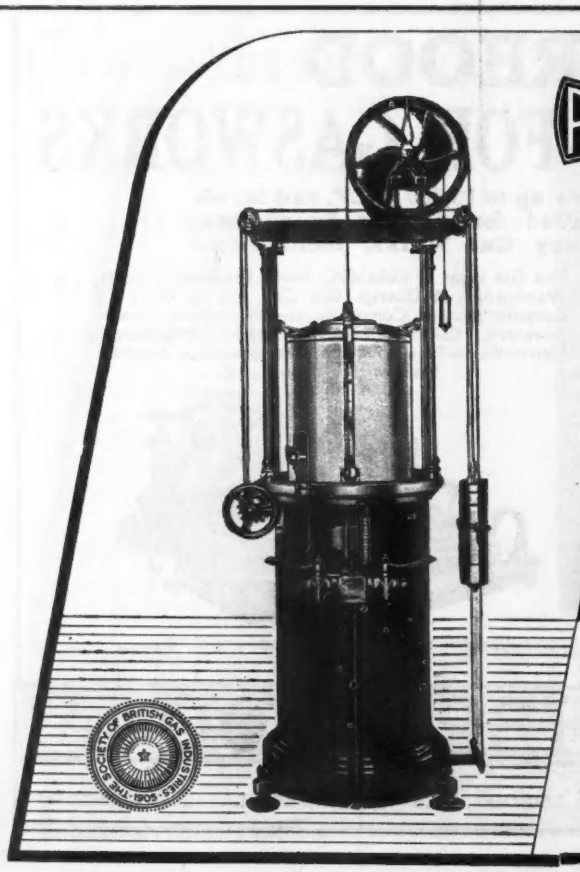

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P.2

GAS JOURNAL, MAY 23, 1945

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EDITORIAL NOTES

INTEGRATION EXAMPLE

THE relaxation we now enjoy, following VE day, in being able to refer without restriction to new gas-works plant is very pleasant, and we find it particularly pleasant to be able to talk freely of the new plant at Swindon, officially inaugurated last week in happier circumstances by the President of The Institution of Gas Engineers, Mr. S. E. Whitehead. The event marked an important stage in a remarkable development scheme undertaken by the Swindon United Gas Company from 1932 onwards and carried through almost without intermission, in spite of the difficulties of the war years, greatly to the benefit of the war effort and to the advantage of the district generally. The story is one of bold and imaginative planning skilfully executed, and it provides an excellent example of geographical integration. On more than one occasion during the war we have toured the Swindon area, and have recorded our impressions in the "JOURNAL" of the encouraging progress made there. In a nutshell, as a result of 12 years' effort the Company's area of supply extends in 1945 into four counties and covers 800 square miles. Everything has gone forward "according to plan." The linking up of small undertakings around Swindon before the war made a first-class, economical gas service available to 26 "additional" villages. The programme to be carried out during the next five years embraces a further 100 "additional" villages. We quote "additional" because this means territory in which, despite its long history, gas was previously unobtainable. It is virgin ground, and Wiltshire experience has shown what a large demand in fact exists for modern gas service in rural areas. Gas is now used in the cowsheds, in the cottages of the agricultural labourers, in manor houses in the wilds of the country. In 12 years the Swindon Company's output has increased fivefold, the capital employed per unit of gas sold has been more than halved, consumption per consumer has steadily risen. In this period the cost of coal increased by 120%, labour by something like 70%. But the average price of gas to the consumer is lower to-day than it was 12 years ago. These bare facts obviously imply much, and Mr. C. H. Chester, who conceived the scheme and, backed wholeheartedly by his Board, pursued its development with great drive, capacity, and enthusiasm, can justly regard with high satisfaction what has been achieved and can look forward with the greatest of confidence. We would add that development of this nature, while obviously benefiting the Swindon area of supply, has added to the general prestige of the Gas Industry.

That what amounts to a new gas-works has been fashioned in the war years is indication enough that the Government sets considerable store by the availability of gas service. Nothing less than the essential would have been accorded priority in the circumstances. That the standard and efficiency of the plant are what they are to-day is pointer to the measure of co-operation which obtains in our Industry between gas engineer and "contractor," both of whom now—fortunately for the future progress and prosperity of the Industry—are fellow members of the same professional body. The erection during wartime of the Swindon plant, part of a composite scheme to accommodate coal gas plant to the capacity of 10 million cu.ft. a day (together with carburetted water gas plant of 1½ millions a day, with, as ancillary, a pitch gas and carbon plant, both erected), is an outstanding example of teamwork, and we think that the sundry pats on the back at the official ceremony last week were well merited. No doubt many gas engineers present envied Swindon's opportunity and its somewhat astonishing immunity from enemy air attack, but all were generous in praise of good work done; and inspection of the plant must have impressed the representatives of the local authorities in the area supplied by the Swindon Company. In the area there are 18 local authorities; every local authority was represented at the ceremony. In a subsequent issue of the "JOURNAL" we shall give a description of the Swindon Gas-Works, 1945, and it is not our purpose to enter into detail in the present short note. We would, however, commend the attention given by the Company to the welfare of the employees; and in this regard there is no doubt that the maintenance of a high standard of efficiency throughout a gas-works depends largely on the working together of a happy team comprising all ranks.

GAS-MAKING COAL RESERVES

WHAT are our reserves of coal at the present time? What is their availability to meet future requirements? At a meeting of the Fuel Luncheon Club in London last week the Director of Fuel Research, Dr. A. Parker, essayed an answer to these perennial questions, which answer we will epitomize. Figures commonly quoted range back to those given by the Coal Commission of 1866, and a review of the several estimates indicate proved reserves of something like 120,000 million tons and unproved reserves of the order of 50,000 million tons—at present rates of production in Great Britain, sufficient to last for six centuries. But the best and most easily accessible seams are being worked first, leaving the more difficult seams to be worked later at greater cost. It would be unwise, Dr. Parker contended, to assume that the production of coal in this country can be continued at the present rate, even with technical improvements, for more than two centuries without considerable increases in relative cost. In relation to rates of production, it would seem that the coal reserves of the world are at least 10 times as great as in our own country. Obviously, if Great Britain is to maintain a high place in world industry, her coal resources must be drawn upon as economically as possible and used with the highest efficiency that scientific knowledge, technical skill, and organization can achieve. Such is a very broad statement of the position—and, at that, merely, of course, a tentative estimate—in a general sense without reference to coal qualities and types.

As the Gas Industry is only too well aware, coal type and quality are matters of the greatest importance; and for intelligent planning we need more than broad estimates of the total reserves of workable coal. We need some idea of the quantity in reserve of each main type and quality that can be brought to the surface at reasonable cost. The importance of a knowledge of the types of coal in the various seams in each coalfield in Great Britain has been recognized for many years. Twenty years ago there was started by the Fuel Research Board a comprehensive survey of the physical and chemical properties of the coals of this country, and the pages of the "JOURNAL" have recorded the progress of this highly important work. To-day there are nine Fuel Research Coal Survey Laboratories, from Glasgow in the North to Cardiff and London in the South, covering all the principal coalfields from Scotland to Somerset and Kent. As a result of this work there is more information about the types of coal in the various seams in this country than there is about the coals in any country in the world; at the same time, the advantages to be derived from intensifying and broadening the work are apparent. In the course of their activities the Coal Survey Officers gained general impressions on the relative abundance and availability of the different types of coal, but they were general impressions only. Recently, however, there has been opportunity of adding data on quantity to the information previously obtained on type and quality.

In July of 1942 the ownership of all unworked coal was transferred to the nation, ownership being vested in the Coal

Commission; previous owners were paid compensation in accordance with valuations made by Regional Valuation Boards. These valuations were based on estimates of the quantities of coal likely to be raised from year to year over a period known as the valuation period. The period generally taken for the assessment was 100 years, and Dr. Parker suggested that, in spite of the difficult and complex nature of the task, fair reliance can be placed on the figures for reserves and rates of output finally accepted. "Doubtless," he said "some mistakes were made; and doubtless, too, it will be found in the year 2042 that there have been considerable deviations from the plans envisaged in 1942. Nevertheless, it is reasonable to assume that the errors and deviations will not all be in one direction and that they will to a large extent balance one another." With the co-operation of the Valuation Boards, the Coal Commission, the Geological Survey, the Ministry of Fuel and Power, and many colliery undertakings, the Fuel Research Coal Officers got down to the task of sifting all the data on quantities and relating them to qualities. This task is now virtually complete.

Last week Dr. Parker gave some of the main conclusions from this qualitative-quantitative evaluation relating to that coal in reserve which is likely to be raised in the next 100 years. The survey does not refer to total reserves, which will be the subject of further co-operative study over a number of years. According to the results of the recent survey the quantity of coal scheduled to be worked in Great Britain during the next 100 years is about 20,000 million tons; over the first 20 or 30 years the outputs planned are appreciably higher than in the remainder of the period, and as time progresses there will be a tendency to work thinner seams of coal of higher ash content, though Dr. Parker suggested that there need be no undue alarm concerning this. The output of 20,000 million tons has been divided into six main types, none of which, according to the evidence, shows any marked tendency to tail off more quickly than the others. The projected output of strongly-caking and medium-caking coals, which are classified as one of the main types and which are generally good gas coals, is about 30% of the total, whereas at the present time only about 10% of the output is used at gas-works. In addition, some of the weakly-caking coals are successfully used for the manufacture of gas for town supply. Thus, concluded Dr. Parker, there is not likely to be any shortage of coals suitable for the Gas Industry, nor, he added, is there likely to be any real shortage during the next 100 years of coals suitable for good metallurgical coke. Why, then, is it often suggested that there is an impending shortage of good coking coals? Dr. Parker's answer to this was that the statement refers, not to coking coals in general, but to the special class of Durham coals which yield the renowned foundry cokes. In point of fact, really good metallurgical cokes are being made from coals of considerably lower rank, in Durham and elsewhere.

The conclusions drawn in Dr. Parker's Address are heartening rather than otherwise, though it should be agreed that "unless there is wise planning, combined with technical development on the basis of scientific knowledge, it will not be easy to supply the coals at reasonable cost. In any case, 100 years is not a long period in the life of a nation, and we are certain to have to face the industrial competition of other countries whose coal reserves are relatively much larger than ours. We must, therefore, do our utmost at all times to withdraw our coal economically and use it with the highest practicable efficiency."

Technical Survey of the Mines

One of the recommendations of the Reid report on the coal industry was that the conflicting interests of colliery undertakings working in an area should be merged in "one compact and unified command of manageable size, with full responsibility, financially and otherwise, for the development of the area." A related recommendation was that as soon as the areas to be covered by the new units had been delimited and the mergers effected a detailed and careful survey would be required by the mining engineers of each unit to determine what technical remodelling was desirable. On the basis of those surveys the merger companies would submit plans of reorganization. The Mining Association prefers to take those two steps in the reverse order, and first to make the technical surveys before considering the extent to which amalgamations are desirable. "There is no time to be lost" were the final words of the Reid report. The Mining Association is not losing time. A committee is being set up, with Mr. R. W. Foot as Chairman, to proceed "as a matter of urgency, in conjunction with the district panels and with the district associations, with all the necessary arrangements for a detailed technical survey of the industry, such arrangements to ensure that those responsible for the conduct of the survey should take fully into regard the Reid report, including chapter 25 on 'The Conditions of Success' and the Foot plan and supplement." Both the survey and the report are to be made "on the firm understanding that it is the policy of the industry to ensure that all technical impediments to achieving maximum efficiency in mining operations are removed." Mr. Foot himself will appoint the committee, which will have seven members.

Personal

Mr. N. J. ROBERTSON, formerly Assistant General Manager, has been appointed General Manager of the Alliance and Dublin Gas Company; and Mr. B. J. DOYLE, previously Chief Accountant, becomes Secretary and Accountant.

Letter to the Editor

Gas Industry Terms

DEAR SIR,—A living language is kept alive by a conservatism which resents and resists any attempt to subvert the tradition upon which it is based, balanced against a liberalism which is willing to admit new words and grammatical forms when these are genuinely needed to express new ideas or to express old ideas in a more lively form. It is in this spirit that one turns to the Glossary of Terms used in the Gas Industry recently issued by the British Standards Institution. There was need for it if only because of the rapidity with which new methods and processes have been crowding into this most lively Industry during the last 30 or 40 years. The following notes were written down just as one turned over the pages of this very interesting B.S. 1179 : 1944.

At the very outset one wonders whether one will ever get used to "volatile therms." Is it ever likely to be a useful term? One may doubt it. More commonly "therms per ton," without the adjective, is used in the (b) sense of term No. 1102—*i.e.*, the therm-value of the gas made per ton of coal carbonized. And it should be a safe bet that this is the form which will ultimately be accepted into technical English.

Section 2 pins us to the spelling "carbonisation," not "carbonization." Well, that may be taken to agree with Fowler and O.E.D., who reluctantly agree that words derived from French or Latin should end in -ise though etymologically it should be -ize, and we shall have to be careful in the future. "To scurf" and "steaming" are examples of good new words which conservatism should not resist. It is a pity there is no neater word than "underfiring" to replace, and finally displace, "fuel consumption." "Tertiary air" is certainly better than "supplementary secondary air," though it does not express the idea with exactitude. "Buckstays" has almost driven out "buckstaves"—but is it better? "Auxiliary hopper" is not so expressive as "Coal-feed hopper"—it does not bear its meaning on its face, but it has the merit of being two words instead of three. Yet "built-in producer" is preferred (and rightly) to "integral producer."

Why must we use "extractor" (and generator, conveyor, elevator, &c.) rather than "extracter" (generater, conveyer, elevater, &c.)? The genius of this language is that -er implies the instrument and -or the agent, as in sailer (the ship) and sailor (the man who sails it), but then, logicality was never a strong point in the English.

It was a pity not to define "scalp, to" with more decision. Surely "to scalp" is to take the top off. It should mean—and in the present writer's vocabulary does mean—to take the large pieces away before proceeding to grade the rest, the scalpings being sometimes passed through the coke-cutter and then rejoining the smaller fractions in the graders.

"Electro-detarring" is used in the definition of 4111, but "electric detarrer" is not yet admitted to the academy; one would think it better than "electric precipitater" at any rate when used to bring down tar fog. "Scrubber" is visibly giving way to "washer," and with advantage; the latter bears its meaning on its face. Something ought to be done about "revivifying (or revivification) in situ."

One is glad to see "town gas" instead of "town's gas." It is a pity that "crude gas" is not reserved for the definition appropriated by "raw gas," the mixture of gases, &c., just as they come out of the retort or oven. The canonisation of "inerts" (a neat word) is welcome.

It is to be hoped that "fingery coke" will never be displaced by "prismatic coke"—a stilted term! On the other hand, will "piston-type gasholder" ever really displace "dry" or "waterless gasholder"?

That is as far as criticism may be permitted to

Yours truly,

May 10, 1945. "CARBONISER."

Institution Meeting Programme

The Annual Meeting of the Institution of Gas Engineers will be held at the Institution of Civil Engineers, Great George Street, S.W. 1, on June 12 and 13, under the Presidency of Mr. S. E. Whitehead, J.P., B.Sc., M.Inst.C.E., M.Inst.Mech.E. The following is the programme:

TUESDAY, JUNE 12.

10 a.m.—Adoption of the 82nd Annual Report and Accounts; Scrutineers' Reports of the Ballots; Presentation of Medals.

10.25 a.m.—Presidential Address by S. E. Whitehead.

11 a.m. to 12 noon.—Presentation and Discussion of Paper on "Gas—In Industry at War," by H. R. Hems, Chairman, Industrial Gas Centres Committee.

12.45 p.m.—President's Luncheon in the Ballroom of the Savoy Hotel, Victoria Embankment, W.C. 2 (by invitation).

3 p.m.—Presentation and Discussion of Paper on "Technical Aspects of the Gas Industry's Contribution to Post-War Housing," by L. W. Andrew, B.A., B.Sc., E. W. B. Dunning, B.Sc., and G. C. Holliday, B.A., Gas Light and Coke Company.

8.30 p.m. to 12 midnight.—Reception and Dance in the Ballroom of Grosvenor House, W. 1. (Evening or Dinner Dress.)

WEDNESDAY, JUNE 13.

10 a.m.—Presentation and Discussion of Paper on "The Gas Industry and the Balloon Barrage," by W. K. Hutchison, B.A., B.Sc., A.M.I.Chem.E., Director of Compressed Gases, Air Ministry.

11 a.m.—General Meeting of Contributors to the Benevolent Fund of the Institution.

11.15 a.m. to 12.30 p.m.—Question time.

12.45 p.m.—Council Luncheon to the President at St. Ermin's Hotel, Caxton Street, S.W. 1.

2.45 p.m.—Presentation and Discussion of Paper on "The Gas Industry and the Plastics Industry," by W. E. le B. Diamond, M.A., Ph.D., F.R.I.C., General Manager, British Plastics Federation, Ltd.

3.45 p.m.—Presentation and Discussion of Paper on "The Production at Gas-Works of Coke for Mobile Gas Producers." Part I—"Factors Affecting the Manufacture of Reactive Coke at Gas Works," by H. D. Greenwood, M.Sc., A.M.I.Chem.E., A.R.I.C., and J. G. King, O.B.E., D.Sc., Ph.D., F.R.I.C., Director, Gas Research Board. Part II—"Some Experiences of the Production of Cokes Suitable for Mobile Gas Producers," by T. F. E. Rhead, M.Sc., F.R.I.C., and E. T. Pickering, B.Sc., A.R.I.C., Birmingham Gas Department.

Gas Supply in South Wales

The Executive Committee of the South Wales and Monmouthshire Industries Association recently discussed the problems of gas supplies in that area. It was pointed out that the coke-oven producers and the retort producers were collaborating on future policy. but it seemed advisable to supplement this by some further relationship between the coke-oven and the Gas Industries.

Sir Robert Webber expressed the opinion that if these two bodies were unable to reach full co-operation, it would be necessary for the Ministry of Fuel and Power to ensure better service, which would hardly be possible without modernized plant, and Mr. Pode (Guest, Keen, Baldwins) urged that the success of the gas grid could not be made dependent on the sale of coke-oven gas at an uneconomic price. Mr. Snelling, General Manager of the Newport (Mon.) Gas Company, said that as South Wales and Monmouthshire formed a Development Area, an immediate improvement was necessary.

After considerable discussion the Committee came to the conclusion that the installation of a grid in South Wales would be instrumental in ensuring a more even distribution of gas in the area, and the following resolution was passed:

"The Executive Committee of the South Wales and Monmouthshire Industries Association view with alarm the inadequacy of gas supplies for new industries, and suggest that the matter be pursued with a view to increasing the quantity of gas available, and its distribution either by means of a grid or any other method that might be found practicable."

On May 1 the Cornish Gas Salesmen's Circle met at St. Austell, under the Chairmanship of Mr. J. C. Cotterill, Engineer and Manager, St. Austell Gas Company, Ltd., when a Paper on the post-war development of gas was given by Mr. R. J. Williams, Engineer and Manager of the Truro Gas Company.

The Housing Committee of the Mountain Ash U.D.C. have decided that the temporary houses erected within the urban area shall be equipped with gas. This decision was arrived at after lengthy discussions and fierce competition from the Electricity Department. The eventual decision was unanimous.

New Plant Inaugurated at Swindon

On Wednesday last the President of The Institution of Gas Engineers, Mr. S. E. Whitehead, inaugurated new carbonizing and ancillary plant at the Works of the Swindon United Gas Company. The carbonizing plant—a 2½ million cu.ft. horizontal installation by W. J. Jenkins & Co., Ltd.—built in the war years and brought into operation at the end of 1943, is part only of a big new works scheme designed to accommodate coal gas plant to the capacity of 10 million cu.ft. a day. Since the beginning of the war the entire works layout and design have been transformed, and in a subsequent issue of the "JOURNAL" we intend to give as full an account of this remarkable transformation as the limited paper supply available to us will permit. For the moment we confine ourselves to a brief note of the official opening on May 16—surely a red-letter day for Mr. C. H. Chester, who, on the Company's Board, is Chief Engineer, General Manager, and Secretary.

The scheme as a whole, as Mr. Whitehead said in inaugurating the plant, is an excellent example of the co-operation which exists to such good purpose between gas engineer and "contractor," between the men responsible for running the plant and those who constructed and erected it; and both engineer and "contractor" were members of the same professional body—The Institution of Gas Engineers. And the fact that such a scheme of modernization and extension had been sanctioned in wartime was ample testimony that the Government attached the greatest importance to an adequate gas supply and recognized Swindon's special needs. As fellow gas engineers (and there was a large gathering of gas engineers at the ceremony) they might be a little envious of, though they were fully alive to and appreciative of, Mr. Chester's sterling achievements.

Following the opening ceremony, at which the Mayor of Swindon, Alderman C. S. Macpherson, assisted by putting into action the coke handling plant, there was a happy luncheon at the Town Hall, held in after-European-war atmosphere and presided over by the Chairman of the Company, Councillor T. Medcalf. Prior to the toast of the Swindon Company, which was proposed by Mr. Whitehead, Mr. E. W. Beard, a Director of the Company, submitted "The Borough of Swindon and Local Government," mentioning that the area of gas supply now extends over four counties, covering 800 sq. miles governed locally by 18 authorities, every one of which was represented at the gathering that day. The Mayor, who responded, paid high tribute to the direction and management of the Company and to the foresight and vision, the enterprise and initiative, and the co-operative spirit shown. Swindon, he said, could be proud of what was demonstrably a first-class works.

Mr. Whitehead said how much they admired the work and the drive of Mr. Chester which had resulted in a works and plant on which he congratulated both the Swindon Company and the contractors. The output of the Company had increased by four or five times in a matter of 12 years, due partly, it was true, to development in demand in the outlying areas taken over, though the sales in Swindon itself had doubled, and, as a result of good service, there had been a marked increase in consumption per consumer. As for the works, their operation showed a thermal efficiency of carbonization of no less than 82%, a figure which reflected the greatest credit on Mr. Chester and his technical staff. Thermal efficiency, however, was one aspect only; there was also the factor of commercial and administrative efficiency. In the 12 years the cost of coal had gone up 120% and labour 65 to 70%, yet the average price of gas sold was actually less to-day that it was 12 years ago. Speaking generally, there were too many small units in the Gas Industry, and the number must be reduced. Integration was not new to the Industry; it had been taking place during the past 15 or 20 years. Swindon provided a remarkable example of what could be achieved in this regard, and they owed the Company a debt of gratitude for their work.

Response was made by the Chairman, Mr. Medcalf, who traced the development of the Swindon Undertaking during the period from 1932 to the present and paid high tribute to the abilities of Mr. Chester—who, he added, enjoyed the advantage of the full support of a keen and a knowledgeable Board who had the courage to back opinion by financial expenditure.

The final toast, that of "The Contractors and other Visitors," proposed by Mr. Chester, was responded to by Mr. R. M. Goodman (Managing Director, W. J. Jenkins & Co., Ltd.), Alderman G. Clarke, J.P. (Chairman, Bryan Donkin Company, Ltd.), and Mr. F. M. Birks, O.B.E. (Chief Engineer, Gas Light and Coke Company), who said how greatly he had enjoyed seeing a very pleasant works operated by a happy team under conditions made as conducive to well-being, and therefore to efficiency, as possible.

A Meeting of the Manchester and District Junior Gas Association will be held at the Partington Gas-Works, Manchester, on June 2, when there will be a Paper by Mr. T. Biddulph-Smith, F.R.I.C., on "Physical and Chemical Reactions of Carbonization."

The fact that goods made of raw materials in short supply owing to war conditions are advertised in the "Journal" should not be taken as an indication that they are necessarily available for export.

London Juniors

The Annual General Meeting of the London and Southern District Junior Gas Association was held on May 11 at Gas Industry House, under the Presidency of Mr. R. F. TWIST, of the South Metropolitan Gas Company.

The Minutes of the last Annual Meeting were read, confirmed, and signed.

The financial statement for the past year was presented by the HON. TREASURER (Mr. S. J. Gibbons) and unanimously adopted on the proposition of Mr. A. H. SAVILL (South Metropolitan), seconded by Mr. G. G. WARNE (Portsmouth).

The HON. TREASURER pointed out that the statement showed that the expenses again exceeded the annual income. This matter had been discussed by the Council, with whose approval he moved that "The annual subscription per member be raised to 10s. 6d., not including the cost of the *Transactions*." Mr. C. A. DEAS seconded this motion and the meeting agreed.

The PRESIDENT than gave a brief summary of the activities of the Association during the past session. Eight meetings had been held, and Papers of a high order and covering a wide range of subjects had been read. He was happy to announce that the Paper read by Mr. C. A. Deas (Tottenham) entitled "Some Notes on Horizontal Retort Practice" had been awarded the Silver Medal of the Society of British Gas Industries. Mr. Deas had given up the Secretaryship, and had been nominated by the Council to be the Junior Vice-President. The President continued that he was sure that the members would not like him to let the occasion pass without paying a tribute to the commendable work done by Mr. Deas during the difficult war years.

The new Secretary is Mr. J. E. Gray (Gas Light and Coke), who in the past has carried out the duties of Assistant Secretary.

On behalf of the members, the PRESIDENT congratulated Mr. B. W. Dawkins, a Past-President, who would be taking office in June as Chairman of the Joint Council Executive Committee, in which capacity he would represent the Junior Gas Associations on the Council of The Institution of Gas Engineers. The President concluded by asking members to support his successor, Mr. L. W. Andrew, to whom he wished a happy and successful year of office.

The adoption of the President's report was moved by Mr. L. W. ANDREW (Gas Light and Coke), seconded by Mr. R. J. PEPPER, and unanimously agreed.

A vote of thanks was accorded to the Officers and Council for their services during the Session, on the proposition of Mr. J. M. WEBBER (Croydon), seconded by Mr. J. ROBERTSON (Tottenham).

The following Officers and Council were then elected for the Session 1945–46:

President: L. W. Andrew (Gas Light and Coke).
Senior Vice-President: G. G. Warne (Portsmouth).
Junior Vice-President: C. A. Deas (Tottenham).
Hon. Treasurer: S. J. Gibbons (Gas Light and Coke).
Hon. Secretary: J. E. Gray (Gas Light and Coke).
Hon. Asst. Secretary: T. S. Ricketts (Tottenham).
Hon. Auditor: G. Wilson-Smith (Gas Light and Coke).
Council: L. J. Clark, T. V. Garrud, R. N. Le Fevre, R. J. Pepper (Gas Light and Coke); W. F. Pritchard (Tottenham), T. S. Ricketts (Tottenham), A. H. Savill (South Metropolitan), F. C. Smith (Gas Light and Coke).
Ex-officio Members: W. A. Howie, J. M. Webber (Southern Association of Gas Engineers and Managers), B. W. Dawkins (Past-President), R. F. Twist (Past-President).

Representatives to serve on the District Education Committee: L. W. Andrew, R. F. Twist, G. G. Warne, and J. E. Gray.

Mr. C. A. DEAS moved that Rule 4 should be amended to enable members who retire from active business life to retain their membership of the Association. Mr. J. E. GRAY seconded this proposal, and the members unanimously agreed.

A vote of thanks to the Technical Press was accorded on the proposition of Mr. T. V. GARRUD, seconded by Mr. B. W. DAWKINS.

The business was concluded by a short account by Mr. DAWKINS of the work carried out by the Executive Committee of the Joint Council.

A hearty welcome was given to the President of the Institution of Gas Engineers, Mr. S. E. Whitehead, and Dr. W. T. K. Braunholtz, Secretary of the Institution.

The PRESIDENT invited Mr. Whitehead to give a talk to members on the work carried out by the Institution.

The functions and duties of the many Standing and *ad hoc* Committees were explained by Mr. WHITEHEAD, whose informal remarks ranged from the submission of evidence to the Heyworth Committee to the refresher courses arranged for men from the Forces returning to the Industry. The talk produced a full and lively discussion. Many questions were asked and suggestions were made for improving the dissemination of reports and technical information, and maintaining contacts with kindred Institutions. The modifications of the Education Scheme and the present procedure for the discussion of Institution Papers were other matters raised by members.

The queries raised were dealt with in a very capable manner by either Mr. Whitehead or by Dr. Braunholtz, who dealt with the matters specifically connected with the Institution.

The PRESIDENT moved that a vote of thanks be passed to Mr. Whitehead and Dr. Braunholtz for honouring the Association with their presence and for imparting to the members a wealth of valuable information. Mr. L. W. ANDREW supported the vote.

Sir Philip Game, Commissioner of Metropolitan Police, presents Long-term Safety-first Driving Awards to over 40 of the Gas Light and Coke Company's Petrol and Steam Vehicle Drivers and Horse Carmen, at Gas Industry House. Left to right: Air Vice-Marshal Sir Philip Game, Commissioner of Metropolitan Police, G. Bennett, A. E. Sylvester, F.C.A., Governor of the Company, H. J. Pridmore, and Charles Dukes, C.B.E., General Secretary of the National Union of General and Municipal Workers.

Diary

May 24.—Midland Association of Gas Engineers and Managers: Spring Meeting, Hinckley.
May 24.—Lancashire and District Coke Association: Annual General Meeting, Engineers' Club, Manchester, 11.30 a.m.
May 25.—North of England Gas Managers' Association (Auxiliary Section): Meeting at the Gas Offices, Newcastle-upon-Tyne, 2.15 p.m.
May 26.—Yorkshire Junior Gas Association: Meeting at the Birkshall Gas-Works, Laisterdyke, Bradford, 2.30 p.m.
June 2.—Manchester and District Junior Gas Association: Visit to Partington Gas-Works, Manchester. Paper by T. B. Smith.
June 12–14.—Institution of Gas Engineers: Annual Meeting, London.
June 14.—N.G.C.: Annual meeting, Gas Industry House, S.W. 1, 10.30 a.m.
June 14.—Federation of Gas Employers: Annual meeting, Gas Industry House, S.W. 1, 2.30 p.m.
June 14.—B.C.G.A.: Annual meeting, Gas Industry House, S.W. 1, 11.45 a.m.
June 23.—Western Junior Gas Association: Meeting at Minehead.

Letchworth, the home of Ewart & Son, Ltd., welcomed the Rt. Hon. Ernest Bevin, Minister of Labour, when he paid a special visit to open the new workers' club in Station Road. Local employers of labour provided an initial maintenance fund of over £1,000, and the Ministry also made a substantial contribution. Artistically furnished and with the best equipment installed everything has been done to ensure full comfort and recreation for its members, and Mr. Bevin in his tour of inspection congratulated all concerned on the result of their efforts. Our photograph shows Mr. Bevin examining the Ewart "Aquafont" geyser, an essential part of the catering equipment.

Eastern Counties Gas Engineers' and Managers' Association*

Presidential Address

of

J. HUNTER RIOCH

(Cambridge)

IT is customary for your President to say something in his Address about his own undertaking, and first, I would like to refer to the organization of the Company which I am privileged to serve, because I firmly believe that it has much to do with its success. The Cambridge University and Town Gas Light Company is not governed in any way by either the University or the Town of Cambridge, although its name might imply such a control. But the Board of Directors—which is entirely local and is unique—has as its members representatives of both the University and the Town. Each Director has been chosen having regard to his specialized knowledge in his own field, and as a result the Board of Directors has ever at its command expert advice and information upon finance, engineering, chemistry, business organization, and civic development. A sound policy and successful management are the natural corollaries of a governing body selected for their talents in the sciences fundamental to the carbonization of coal and the processing and marketing of the products. The influence of this strong foundation permeates the entire structure of the Company's organization, and has as its logical outcome an increased standard of service in all its implications to our customers—the general public.

It matters not how wise decisions of policy may be, there remains the complemental factor of translating the blue-prints of to-day into concrete facts to-morrow. The efficiency of this translation is determined by the efficiency of the individuals whose task it is. Much can be done by careful organization at the highest level, but the achievement can only be capped by the applied effort of each employee. Each and every employee must be trained and equipped for his especial task, and be conscious of the contribution which he makes to the successful whole. I shall return later to the subject of educating and training the young men in our Industry, but I should like to stress here some of the measures introduced by my Company to fuse individual employees into a working team imbued with the common ideal of the maximum service to our customers. For that is our prime task, and the extent to which it is discharged is the only true yardstick of the efficiency of an undertaking.

A first step in building up such a team is the careful recruitment of the individual. Careful selection followed by equally considered training, and the provision of scope and reward for talent displayed, are fundamental to an effective and harmonious staff. Initiative and resourcefulness are most easily fostered early in life, and self-reliance is a virtue which only fructifies from trust well placed: it is the task of management to choose carefully, but, having chosen, to allow the individual maximum play for his abilities. The fact that each individual is one of a team directing its efforts to a common end is a conception to be implanted in the minds of all.

My Company has endeavoured to further the welfare of its employees and to bring them even closer together by several measures. There is a very active recreation club managed by a committee representative of the various sections of the Company's organization. Extensive recreational facilities are provided, and much benefit has accrued to staff and Company alike in bringing the members together in sporting and social recreation.

A Co-partnership Scheme was introduced as long ago as 1909 to give all a stake in the Company's progress, and since that time well over £65,000 has been handed to employees as bonus, out of which £36,110 of the Company's Stock has been purchased. Dividends received by employees have amounted to over £20,000.

A further step in bringing the members of the Company's organization closer together and in interesting them in the Company's affairs and the affairs of their fellow employees was the introduction some eight years ago of a house magazine under the title of *The Cambridge Gas Bulletin*. A gas undertaking, by its very nature, is a diffuse body, and many members of the staff never come in contact with one another in the normal course of business. The Bulletin provides an admirable medium for announcements of policy and development throughout the undertaking, for recording the activities of the Recreation Club, for dealing with the affairs of the Co-partnertship Scheme, and in general brings together the entire staff, giving the individual a true perspective of the Company and its important achievements. The individual is thereby assisted to make even greater contribution to the ideal of maximum service to the public. Articles are invited from employers upon all matters of general interest, and the *Bulletin* has served a very important purpose in wartime by keeping the staff adequately informed of the progress of the various members who are absent on war service.

* Meeting in London, May 10.

Before leaving this subject I should like to emphasize one last point. Interest exhibited in the welfare and progress of personnel is an investment which yields the highest of dividends. Nothing leads more quickly to stagnation than an impression in the employee's mind that no interest is taken in his work. If that impression prevails it is a very short step to a belief that he is of no importance. Slipshod work follows. On the other hand, if each employee believes that he and his work are of importance and that he will be rewarded according to his merits, a live and efficient staff is already in being.

Plant Extensions at Cambridge

Dealing now with some of the extensions to plant which have been carried out during the past eight years, the most important of these is undoubtedly the installation of a new type of carbonizing plant known as the static vertical retort, which was fully described in a Paper to The Institution of Gas Engineers in 1938 by Walter Grogono, of Croydon (a Past-President of this Association), and T. Campbell Finlayson, of the Woodall-Duckham Companies, entitled "The Test Installation of Static Vertical Retorts at Croydon Gas-Works." I will therefore content myself by relating to you the main considerations which influenced the choice of, and the main advantages which have accrued from, the use of this new type of plant, because gas engineers are always interested to know the reasons for installing any particular type of plant. There is no best form of carbonizing plant, and each case must be considered in relation to the local conditions.

In 1937 it was necessary to consider the modernization of the gas-making plant at Cambridge. At that time the plant comprised horizontal retorts with a total gas-making capacity of 2.4 million cu.ft. per day and C.W.G. plant with a total gas-making capacity of 3.0 million cu.ft. per day. The declared calorific value was 475 B.Th.U. per cu.ft., and benzole stripping to the extent of 2 gallons per ton of coal carbonized was practised. An excellent market had been built up for large coke for central heating—as would be expected in a University town—and the Company's road tar was largely used in the surrounding district. When, therefore, the time arrived to select new carbonizing plant it was essential to bear in mind a number of requirements, which may be summarized as follows:

(1) Increased thermal yield of gas per ton of coal carbonized, owing to the steadily increasing price of rail-borne coal.

(2) Possibility of easy variation of the calorific value of the gas *ex* retort house in summer and winter—in times of low demand making gas of the declared calorific value, and in times of high demand making gas of high calorific value to which lightly carburetted water gas could be added as required.

(3) Reduced requirements of labour.

(4) Improved amenities for, and reduced physical efforts of, the retort house workers.

(5) Maximum cleanliness of the gas manufacturing process by reducing smoke during charging, and steam and dust when discharging.

(6) Increased output of gas per square foot of ground space in the existing retort house, which was to be reconstructed.

(7) Minimum disturbance of the already well established markets for coke and tar. This necessitated the production of a hard coke of density similar to horizontal retort coke and of a highly aromatic tar.

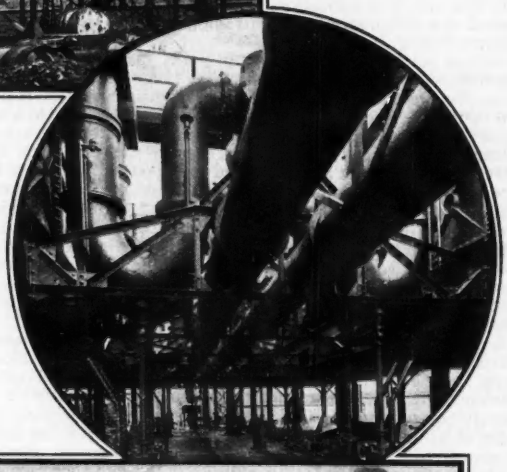
Four types of plant were considered—horizontal retorts, continuous vertical retorts, intermittent vertical chambers, and static vertical retorts. For our particular requirements an extension of the horizontal retort plant appeared unattractive on all points except No. 7; continuous vertical retorts were good on all points except No. 7; intermittent vertical chambers were possible on all points except No. 5. It was therefore natural that consideration be given to the recently developed type of plant which claimed to combine certain of the features of continuous vertical retorts and intermittent vertical chambers—namely, the static vertical retort. It appeared that this system of carbonization met all seven requirements, and consequently it was decided to install a bench of 10 retorts, which came into operation in December, 1939. The plant has since been extended by a further 8 retorts, which came into operation in October, 1943. The output of the complete installation is 2 million cu.ft. per day under normal working conditions.

It may be interesting to record that our anticipations have generally been attained. In a horizontal retort house in which 1 million cu.ft. per day was originally made, and which was subsequently converted to an inclined retort house of similar capacity, 2 million cu.ft. per day are now being produced. By reason of the special system of smokeless coal charging and the discharge of cool coke any "nuisance" outside the retort house is eliminated.

A much higher thermal yield of gas per ton of coal carbonized is being obtained than from any other form of plant of which we have knowledge. In practice it is found to be possible, by varying the depth of the coal charge and the degree of steaming, to vary the calorific value of the purified gas before benzole extraction from

ELEVATED DEEP PURIFIERS

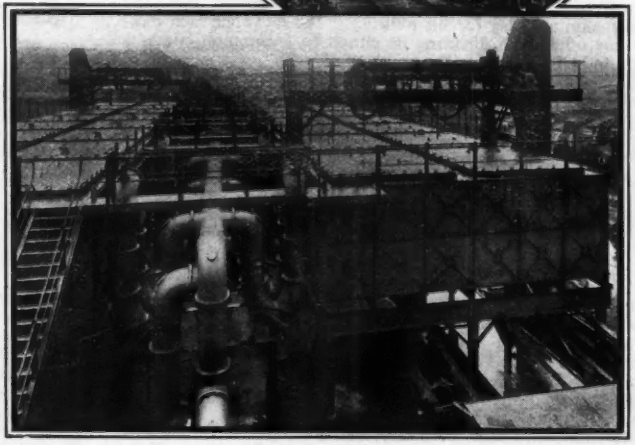
by Dempster OF ELLAND



As specialists in Purifier design, we have given considerable attention to this type of installation, and have built many such sets.

We illustrate a recent contract comprising 8 Boxes, 30′ 0″ × 30′ 0″ × 10′ 0″ deep on Steel Structure, with our Combined Travelling Oxide Plant and Cover Lifting Gear.

Top: General view. (In background, Gas-holder also erected by us.)
Inset: Showing Connections.
Bottom: Overhead view.



These Purifiers designed for a gross capacity of 8,000,000 cu. ft. of gas per day.

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530 to 460 B.Th.U. per cu.ft. There has been no disturbance in the quality of coke or tar—both have been found to be interchangeable with the corresponding horizontal retort products. The physical effort of the retort house operatives has been reduced and their amenities have been improved, while the manpower required per million cu.ft. of gas made has been more than halved. It will be seen, therefore, that the choice of the static vertical retort has proved well founded.

For many years my Company has sold a large proportion of its production of tar locally. The principal use to which this tar has been put is in the construction of roads, and, realizing the absolute necessity of producing a refined road tar of the highest possible quality, it was decided in 1940 to install the latest type of tar distillation plant. This plant, which was manufactured by the Chemical Engineering and Wilton's Patent Furnace Company, incorporates a coil still on the recirculating system and is capable of treating 40 tons of crude tar per day, with overload capacity of a further 25% when producing refined tar to British Standard Specification No. 76, 1943, Type "A," from crude tar containing not more than 5% of moisture.

The crude tar distilled has been a mixture of static vertical and horizontal retort tar in varying proportions, and no difficulty has been experienced in obtaining the nominal throughput. The plant has been found entirely satisfactory with crude tars containing up to 10% moisture under abnormal conditions of test.

The tar is distilled to a soft pitch and the oils are fractionated into three qualities in a 17-tray reflux column. The fractionation of the oils is excellent in respect of the clean cuts obtained, as the following summary of the properties of the primary products indicates:

(1) Soft pitch	25°–30°C.—R and B test.
(2) Crude benzole fraction ..	95/98% at 190°C.
(3) Naphthalene fraction containing the bulk of the tar acids	35% at 200°C. 95% at 300° C. Tar Acids 26/28% by volume.
(4) Creosote fraction	5% at 300°C. 90% at 350°C.

The larger part of the creosote fraction is used to oil back the soft base pitch to give road tar of the required viscosity, which in our case is normally 80 seconds at 30°C. by the B.R.T.A. Viscometer, but this of course can be varied at will.

The oiling back process gives a better quality of road tar due to the absence of low boiling constituents, and also complete control of viscosity, which can be varied to meet the individual purchaser's requirements. The plant can be changed over in a matter of minutes to produce a straight run tar, but the advantages referred to have proved so great in practice that it is unlikely that reversion to straight-run production will take place in the future.

The proportions of final products obtained during 1944 were as follows:

	%
Water	5.0
Crude benzole fraction	6.0
Naphthalene fraction	9.5
Creosote fraction (surplus)	4.8
Road tar	74.7
Crude tar	100.0

The crude benzole fraction commands an excellent revenue, while the naphthalene fraction is rich in naphthalene and the high tar acid concentration further enhances its value. The surplus creosote oil finds a ready market for hydrogenation and timber preservation.

Perhaps the most interesting feature of the plant is the central control panel, from which fully automatic control is exercised over the tar level in the distillation column and over the fractionating column head temperature, and the grade of all products can be modified by adjustment of the panel controls. All temperature and pressure indicators and recorders are also accommodated upon the panel, thus enabling the operator to keep the entire functioning of the plant under simultaneous observation. The controls are by Foxboro Yoxall, compressed air being the operating medium.

Other Activities at Cambridge

Before leaving the activities of my Company may I refer to a matter which I believe to be of some considerable importance to the Gas Industry—namely, contacts with the Press. My Company's policy is to keep in very close and constant touch with the Press, through our Press Officer, who is a member of the Company's staff, and combines this function with his other duties—he is the link between the Company and the Press. He has become acquainted with the style, make-up, and policy of our local paper and frames his articles accordingly, bearing in mind that news only is required, and that everything submitted to the Editor must possess definite local news value. All copy is submitted to a responsible officer of the undertaking before passing to the Press, and where an authoritative statement is required the chief executive conveys his instructions through the Press Officer. Whenever the Company is represented at a function of any kind the Press Officer attends, and thereby ensures that the Press obtain adequate and suitable information. He meets the reporter, whose time is often very limited, giving him all information possible, conducting him round, pointing out items of special interest, providing a detailed description where necessary, and this service is helpful and much appreciated. Thus it is possible to convey to the public the purpose underlying an exhibit and to present the message intended in the most attractive manner. Courtesy and attention to the comfort of the Press representative are also important. We find that when the Press require information, this officer, who is now well known to them, is contacted, usually by telephone; he then makes the necessary enquiries in the appropriate department of the Company, provides the information without delay or annoyance to the Press, and, more important still, avoids the risk of something being published which is not in accordance with the facts. Fostering good Press relations is a long-term policy which produces advantages eventually by—

(*a*) Stimulating and maintaining local interest in the activities and developments of the Company.
(*b*) Developing goodwill between the local Press and the Company.
(*c*) Co-operating with the local Press in ensuring that the public has reliable information.

The following extract of a recent letter from the British Commercial Gas Association (now merged with the National Gas Council into the British Gas Council) is my only reason for referring at such length to my Company's policy in regard to the Press, in the hope that it will stimulate others to consider their own policy:

> "It is most unfortunate that more undertakings do not take the interest . . . in keeeping contact with, and giving information to, the local Press. If every undertaking was as interested in this matter the cumulative effect to the Industry as a whole would be enormous, and I do not regard that as an exaggeration."

From matters of purely local character let me now turn to those of regional or district significance.

Mutual Aid

The vital importance of each undertaking directing its efforts to ends in the common interest has been clearly demonstrated in the war years. Motives of self-interest in the future can only result in the disintegration and perhaps ultimate destruction of our Industry. Devotion to a common policy directed always towards the maximum standard of service to the nation must be ever first in our thoughts, for it is by the standard of our national service that we shall be judged. In my capacity as Regional Gas Engineering Adviser in the Eastern Civil Defence Region, it has been my good fortune to observe at the closest range how much that service was furthered during the war years by the Regional Mutual Aid Scheme. Undertakings and officials gladly pooled their entire resources, with the result that difficulties which a few years ago would have seemed insuperable, were overcome in a matter of hours. The spirit which made possible a co-operative attack upon the problems created by war must not be allowed to pass, and a similar approach will materially assist in finding a solution to the problems of the peace. I cannot leave this subject without expressing my gratitude to all the undertakings in the Eastern Region for their staunch and unfailing loyalty and support to the Regional Mutual Aid Scheme, and special praise to the Assistant Advisers, Mr. Weston, of Norwich; Mr. Garrard, of Ipswich; Mr. Winch, of Cambridge; and my personal regional assistant, Mr. Beavis.

No note on mutual aid would be complete without reference to the Regional Gas Engineering Advisory Boards set up in each civil defence region in 1943, under the aegis of the district associations of gas engineers and managers. The Eastern Regional Gas Engineering Advisory Board is serving an increasingly useful purpose in rendering assistance to the undertakings in this region, particularly in regard to their technical problems. The members of the Advisory Board, who act as visiting engineers, have been met with the utmost degree of courtesy and frankness when they have visited the various undertakings, and this is very much appreciated by the Advisory Board.

The purpose of such visits is really two-fold. They are intended not only to elucidate information which has been sent to the Advisory Board in the operational data returns, but also to obtain first-hand knowledge of the conditions under which the undertakings are working, thus enabling the visiting engineer to render every assistance possible on any problems with which the undertakings may be faced. The importance of accurate and prompt completion of the operational data returns which are sent out twice yearly cannot be over-emphasized, because it is on the basis of the information thus provided that the Advisory Board is able to present a picture of the working of the Industry in the Region to the Co-ordinating Committee of The Institution of Gas Engineers, on which Committee the Ministry of Fuel and Power is represented and receives general reports as to progress in the Industry. There is no doubt that since the inception of the Advisory Board there has been appreciable improvement in the efficiency of operation of a good many of the works in the Region.

If the Gas Industry is to maintain a status comparable with other engineering industries, it is of vital importance that accurate and reliable assessment of the efficiency of its processes be available to technical men outside the Industry. For that reason the Advisory Board aims high, and desires to take every opportunity of raising standards *now* so that the Industry can hold its rightful place with other modern industries.

It will, therefore, be realized that maintaining a high standard and presenting a full picture of the work which the Industry is doing is of the greatest importance for the welfare of the Industry, as at the present time too much emphasis cannot be laid on the high thermal efficiency of the process of gas production in relation to the problem of coal conservation.

Education and Training

At the last meeting of the Association a new Education Scheme Secretary was appointed in the person of Mr. R. Wardell, of Boston—a young man of great promise, whom I hope members will support adequately. To-day representatives have been appointed to the Eastern District Education Committee, which I hope sincerely will get to work quickly, because your Committee feel strongly that in this district more interest must be taken in the Education Scheme of The Institution of Gas Engineers if we are to be faithful to our trusts to the young men entering the Industry. One of the tasks which the new Education Committeee might usefully tackle is the preparation of a list of students—potential and actual—so that close contact with these young men can be maintained in order to ensure that they are following the most suitable course to meet the needs of the Education Scheme, and that they are on the right road—surely our first duty to our staffs.

I now pass from matters of special interest in this district to those of general interest to the Gas Industry.

Development of Youth

It is my belief that far too many young men in our Industry do not develop the qualities to which I referred earlier in this Address—namely, initiative and resourcefulness. It is a first duty of management to encourage acceptance of responsibility by the young men, for self-reliance is a quality which is best developed in youth. To-day it is more than ever essential that every individual in our Industry should be as highly developed, should receive as good a general education and training, as possible, should be taught a deep sense of personal and collective responsibility, and should develop a high sense of duty. This means not only in education, but in team work also. Such education must stress the fact that anybody who accepts more from the team than he contributes, who seeks to take more out of life than he gives, constitutes a liability rather than an asset. On the other hand, every man who gives more than he receives creates values, and therefore leaves something of a positive value to his fellow workers at the end of his career. What could be finer and nobler in this life?

Publicizing the Industry

Much is heard to-day upon the subject of recruitment of young men into our Industry. It is my belief that our gravest sin in this matter is one of omission. We do little to publicize the excellent opportunities existing for a successful career as a gas engineer. Other technical industries maintain closer relations with technical colleges, and in many cases earmark their young men before their college training has been completed. Further, other technical industries finding a young man of worth within their ranks will make possible the release of that young man for technical training to the standard which his talent merits and which his employer requires. The student's chief opportunity to adjudge an industry is the interest which is apparently shown in the work of the colleges by that industry. Thus the cream of the talent has been skimmed even before the young men have left college. Our Industry can offer ultimate prospects far in advance of most, but unless we can convey this information to the proper quarter—that is, the young men in training—and in an attractive manner, there is little hope of securing the right men.

A studied publicity in this matter is required; the ultimate prospects for a talented youth in our Industry compare equally with, if not more favourably than, those offered in any other industrial field, but the remuneration offered to junior technical staff must be adequate to encourage the best quality of University or technical college graduate.

A querulous note is heard in certain quarters to-day, and it is suggested that, because of its supposed modernity, electricity is receiving a false support by Press and public alike. A counterpart publicity for our Industry is a matter for action rather than for unavailing lamentation at the ways of our competitor. I have indicated earlier in this Address what it is possible for each undertaking to do to assist in public relations. On the point of modernity, each year that passes sees both industries one year older, and a generation has reached maturity that has known both services from earliest years. Questions of novelty can hardly be said to influence them. That there may be transient fashions is admitted, but evolution is relentless, and the spurious is ultimately revealed. The business will in the long run pass to the better public servant—that is, the industry providing the higher standard of service at the lower cost. Competition is not unhealthy, and he that wrestles with us strengthens our nerves and sharpens our skill. Our antagonist is our helper, and it is a privilege to strive ever to a higher standard in our service to the public. But there is no place within our ranks for the faint-hearted. Let it never be said that the fault was ours.

Gas Installations

Midland Junior Discussion

Following the Annual Meeting of the Midland Junior Gas Association at Birmingham on April 19, a discussion took place on "Gas Installations," Post-War Building Studies No. 6.

The President, Mr. F. J. Bengough, occupied the Chair, and Mr. R. J. Rogers, who was Chairman of the Committee which made the Report, replied to the debate.

The PRESIDENT, introducing Mr. Rogers, said he was a foundation member of the Association, a Past-President, and at present an Honorary Member. It was rather difficult to discuss a report of that kind made by experts, but Mr. Hill, their late Secretary, had kindly offered to open the discussion.

Mr. HILL said he would confine himself to comments on some of the paragraphs of the report.

Para. 4. There was reiteration of the main points of the foreword of the British Standard Code of Practice for the provision of engineering and utility services in buildings. This dealt with the preparation by the architect of plans showing the disposition of various pipes, conduits, and cables, and with consultations between architects and engineers responsible for the various services. Everyone would thoroughly agree with the suggestions put forward, but how were they going to get them put into practice? He would like to suggest that hitherto architects had been too much of the artist and not enough of the engineer. His own theory was that the closer the building fitted into the purpose for which it was designed the more beautiful it would be.

Para. 9. Certain nomenclature which had been agreed with the Electrical Installations and Plumbing Committee was given. He greatly welcomed the adoption of "control" instead of main cock, and thought all these standardized names should be adopted as quickly as possible.

Para. 11. The use of a common trench for more than one utility service was very attractive to the lay mind, but was not the gas service better laid in its own trench on its own firm bottom?

Paras. 14, 15. Had anyone present had experience of copper service pipes? He was under the impression that lead service pipes had been in use in several places, notably in Blackpool, for many years, and that information as to their suitability would have been available.

Para. 40. One paragraph stated among other things: "It is important that every new building should be suitably provided at the time of its construction with gas installation pipes and points for the installation of gas appliances." In the Gas Industry they agreed, of course, that it was important that every new building should be suitably provided at the time of its construction with gas pipes and points for the installation of gas appliances, but again the question arose how were they to persuade the public, the builder, and the architect of this? And who was to pay? The order in which he had put these—*i.e.*, public, builder, architect—was in his opinion the order of relative importance as regards the weight and direction of their publicity concerning gas. Maybe the architects would have more to say in house building than they did between 1919 and 1939.

Para. 53: As to jointing compounds, he would have thought that positive suggestions of suitable materials would have been made in order of merit and the use of white lead deprecated.

Para. 58: He would like to hear the opinion of the meeting as regards the laying of horizontal pipes in solid concrete floors in cases where ducts could not be provided.

Para. 66: It was said "the use of sharp radius elbows should be avoided where long sweep elbows or bends can be fitted." That recommendation one always found in books and instructions regarding gas-fitting, but how many fitters carried it out and why didn't they?

Para. 73: He would like to know if that meant that pipes should never be laid on the face and touching a wall or ceiling?

Para. 74: With regard to corrosion, it was interesting to note that the regulations of the Swiss Association of Gas and Water Engineers stated that "Pipes must not be embedded in gypsum or come in contact with wood cement."

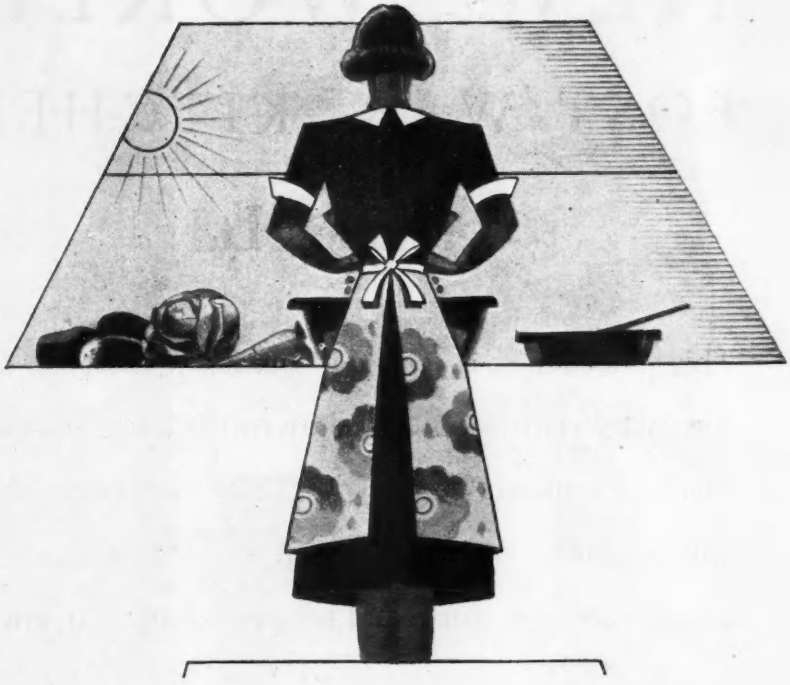
Para. 89: As to testing, should this be done free by the gas undertaking? What exactly did certification imply? Suppose gas pipes were found not to be sound; he would like to have seen it laid down that in no circumstances should unsound pipes be made good with stopping cement or similar means, but should be replaced with sound pipes or fittings.

Paras. 108 to 111. As to the fixing of meters, should it not be laid down as the responsibility of the person fixing the meter to see that the pipes and appliances (if any) were flushed with gas?

Page 21, Section 3. In regard to gas appliances he thought the suggestion for the standardization of the sizes of fireplace openings was very good, and it was to be hoped that this would be adopted. As to governors, he would have liked to see some reference to them and the recommendation that gas undertakings be consulted before these were fitted.

Para. 141. The recommendation was made that "special provision" should be provided in the kitchens for adequate ventilation, but no suggestion was made as to the "special provision" to be provided. Although it was adding another appliance to the household equipment

IMAGINATION



The easy-clean gas cooker, pioneered by Parkinson, was the source of inspiration for the labour-saving kitchen now taking shape in her imagination. It is natural that she should consider the one an indispensable part of the other.

Parkinson

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NEW WORLD GAS APPLIANCES

A NEW WORLD POST-WAR KITCHEN

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General view in the Principal Kitchen of a large Canteen Installation by

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requiring maintenance, he believed there was a need in many kitchens for an electric extractor fan of the correct type, which could be switched on when required.

He could not find any reference to the fixing of cut-out valves on appliances to which gas supply might fail and come on again.

Mr. W. C. STEWART (Wolverhampton) congratulated Mr. Rogers, and said that in para. 48 there was a reference to plastic pipes. He was disappointed that more was not given in the report about that subject. There was also the question of an incinerator. If they were going to do away with the kitchen fire and there was not a coke fire or a boiler installed, then he would like to have Mr. Rogers' opinion as to the best type of incinerator and the position in which it should be placed, and whether it should be gas-fired or coke-fired.

Mr. F. A. REYNOLDS (Wolverhampton), in reference to the suggestion that architects, builders, and others concerned should consult together, he thought that in this respect they were fortunate in Wolverhampton. Architects sent them complete drawings with the complete gas service indicated, and asked for suggestions. He believed that the days were gone when outside men put in a gas service without reference to the gas undertaking. It was urged that jointing compounds should be non-corrosive; he thought they should also be clean. He did not care how good a fitter was, if he had to work with a black jointing compound he could not make a clean job. He knew that use was often made of sharp elbows instead of sweeping elbows.

Mr. F. N. TIDBALL (Cannock) remarked that it was stated that the Committee had reviewed the past and present practice of the Gas Industry, and found that few improvements were likely to be made in the immediate future either in materials for, or methods of laying gas service pipes. Surely the word there ought to be "many" and not "few." Were they not hoping and expecting to get improvements in steel? They had vast improvements in kinds of steel and alloys from the last war, and he hoped that out of this war they would get a copper bearing steel or something of the kind which would not suffer to the same extent as did wrought iron and ordinary mild steel pipes. As to meter fixing, he thought they would have difficulty in persuading their friends the builders that they must not fix the meter in any of the positions to which exception had been taken.

Mr. A. G. CRANMER (Willenhall) said what attracted his attention was the use of copper pipes. He thought there was a great future for them for external use, but his area had not been attracted by them.

Mr. F. L. ATKIN said he thought that inspection, testing, and certification were most important parts of the gas undertaking's responsibility. Certification, as far as he knew, was a new factor. It was not stated how certification would take place or by whom, or to whom that certificate would be given.

Mr. R. J. ROGERS, replying, said the report they were discussing was one of a series in the Post-War Building Studies published by the Ministry of Works. The Institution of Gas Engineers was asked by the Ministry of Works to appoint a Committee to act on certain terms of reference. If they looked at the report they would see that it specifically mentioned that the Committee were to review existing information and practice concerning installations in buildings, and then it went on (in Section "B") to refer to gas-operated household appliances serving the single family dwelling. They were told by the representatives of the Ministry who attended their Committees that the main purpose of these reports on Post-War Building Studies were, in the first instance, to be directed to houses occupied by the low income group of tenants. From this they would see the reason why certain references were not made to large installations for factories, industry, &c. It was anticipated that later on they would be asked to deal with gas installations so far as they affected those premises. But after they had started their investigations they were informed that the question of large buildings was being dealt with by the Mechanical Installations Study Committee. A report was accordingly prepared by this Committee, convened by the Institution of Mechanical Engineers, and a representative of the Gas Industry was appointed on that Committee. He himself acted on it for about 12 months, and then Mr. Dean Chandler, of the South Metropolitan Gas Company, took his place. What the Committee dealt with in the report now under discussion was mainly for the great bulk of housing which would be carried out during the next five or ten years.

They would understand that what was put forward was in the nature of recommendations. There was nothing mandatory or obligatory on the part of architects or builders, or even on gas undertakings, to do what was stated in the report. But he thought they would agree that the recommendations, if acted upon, should lead to a better general standard of installation work throughout the Industry. Various committees had been set up to prepare Codes of Practice for the M.O.W., and Codes of Practice were being prepared for all the trades which had anything to do with post-war building. These committees would be able to deal in a more detailed and specific way with many of the points mentioned in the Installations Committee report. Correct fitting depended upon the people in charge of the fittings departments of the various gas undertakings, and there was the question whether the flue pipe would satisfactorily take away the products of combustion from any apparatus, which it would not do unless fitted in accordance with approved practice. This practice would be outlined clearly in the Codes of Practice report, and there should be no difficulty in any properly controlled gas undertaking ensuring that the products of combustion were properly taken away from an appliance.

Reference had been made to the architect consulting the engineers concerned when the plans were being prepared for any building. That was a recommendation, and it rested with the gas undertaking to see that their organization in their particular area was such that they were able to keep in touch with architects and builders at an early date when the plans were being prepared. It might be assumed that a particular architect engaged in the district for a good many years would have studied the requirements of the department dealing with architects and builders, and time spent on this matter at the beginning would prove most useful in seeing what provision could be made both for the entrance of service pipes and the position of internal pipes, as also for the position of the meter and of the flue. This had been stressed in the Report. They had emphasized another important matter to the Ministry of Works by making it clear that unless the provisions for gas service were taken in hand when the plans were being prepared, the subsequent installation would cost very much more, because it always cost more to install pipes and appliances after the premises were built than if it were done in the earlier stage when the structure was being put up. He therefore hoped that every gas undertaking would take steps to ensure that contact was made with the designers of houses and the builders at the earliest possible moment.

The adoption of a standardized nomenclature for gas, water, and electricity services agreed to by the Installations Committee in consultation with the Electrical Installations and Plumbing Committees was, he thought, a very good move with which everyone would agree. The next point alluded to was the laying of public utility services in one trench. The Gas Installations Committee, which comprised practical men from various parts of the country, felt that they could not recommend that a common trench should be used. They did not say it should be used; but where a common trench was made for more than one public service, they did say that the undertakings concerned should consult together with a view to securing some agreement regarding the position and placing of the services therein. In other words they found it advisable where any local authority allowed gas, electric, and water services in one trench, that the three undertakings should agree among themselves as to how the pipes should be laid so as to insulate them from the electric cable and so forth. But the Committee realized that there were many difficulties, and their main point in mentioning this matter was that there should be the utmost collaboration where a common trench was used.

The use of light gauge copper for service had been considered by the Committee most carefully, and they came to the conclusion that there was not sufficient evidence to justify a recommendation as to the general use of copper pipes for gas service. They were not assuming that it might not be possible with some alloy in the future for something of that type to be brought along, and as showing how thoroughly they went into the matter, he might say that evidence was obtained from the Copper Association, which had a good deal of experience in this respect.

In regard to practice in the future, Mr. Tidball had expressed surprise that the Committee had stated "there were few improvements likely to be made in the immediate future either in materials or methods of laying gas service pipes." That was a candid view taken by the Committee after examining all possible types of pipes which might be suitable for the service of gas, from the main to the meter. He must emphasize the limiting words of "the immediate future," for they hoped they had inserted nothing in the report which would interfere with research in any possible direction which might be useful to the Gas Industry. But he was bound to say that so far as the immediate future was concerned, the materials now used were unlikely to be changed, and they could not be too specific about their recommendations. One or two members had referred to jointing compounds. The Committee stated that where jointing compounds were used they "should be of a non-corrosive nature, composed of materials which will facilitate the disconnexion and re-making of sound joints when necessary." The reason why they did not make any specific recommendation here was due to the fact that jointing compounds of a proprietary character were marketed up and down the country; many of them were very good, and some not so good, while some perhaps would not be used by a discriminating distribution engineer. But they considered that this was a matter which must be left to the judgment of the particular gas undertaking. He agreed with Mr. Reynolds that if he were dealing with such a job himself he would specify a clean jointing compound.

Regarding the position of the meter, this was an important matter, and a subject to which the Committee gave a great deal of attention, but again they realized that they could only make recommendations. He was sure that everyone in the Gas Industry would agree that the time had come when both gas and electricity meters should be fitted—and particularly if of the prepayment type—in a suitable position, so that the housewife could insert the necessary coins without inconvenience. The Committee's recommendation, similar to that of the Electrical Committee, was that the meter should be fitted at a definite height from the floor and housed in a suitable cupboard.

Stating that the fireplace opening was another important matter, Mr. Rogers said a Committee of the British Standards Institution had been set up, and on this Committee were representatives of the gas, electrical, and solid fuel industries. If they could agree on a standard size of opening for fireplaces with the firegrate makers, so that appliances might be designed, whether they were gas or electrical, so as to fit in harmony with the grate (rather than let the appliance be regarded as

an afterthought, as many of these installations appeared to be to-day), it would be a great advantage, and vastly improve the appearance of the general setting.

Kitchens should be well ventilated. Their argument was that whatever the system of heating—whether gas, electricity, or solid fuel—the woman's workshop where the cooking and washing was done should be adequately ventilated. The Committee had not made any specific recommendations. In many cases the structure of the building was suitable for the installation of a properly designed brick flue which would work every minute of the 24 hours. But whatever means of ventilation was adopted, whether electric fan or properly designed flue, there should be an adequate change of air.

Mr. Hill and Mr. Atkin had referred to para. 89: Inspection, Testing, and Certification, and asked if this should be done free by the gas undertaking. The opinion of the Committee was that whoever installed the pipes should be expected to test the installation, and in any case the gas undertaking should be satisfied, before connecting the gas supply to the meter, that the installation had been tested in the manner outlined in this paragraph. All unsound pipes and/or fittings should be replaced by sound ones, and stopping cement should not be used on defective fittings. Mr. Rogers assumed that all progressive gasfitting departments of undertakings would ensure that such tests were properly carried out.

One or two members had referred to the absence of governors in the report. Mr. Atkins' remarks were pertinent. There was certainly a confusion of ideas as to when and where a governor should be fitted. One school suggested a governor should be fitted as an integral part of all gas appliances; others suggested a service governor; some agreed to the fitting on the inlet of the meter; while others suggested it be fitted on the outlet of the meter. There was not sufficient unanimity to warrant any specific recommendation being made in the report as to the fitment of governors, but the Committee did ensure that in specifying the space to be provided for the meter there was sufficient room for the installation of a governor if desired.

Disappointment had been expressed that more had not been given in the report concerning the use of plastic pipes. If para. 48 was carefully studied it would, he thought, be agreed that in the circumstances the Committee were wise in stating that until evidence of their suitability for gas installations was available, plastic pipe should not be used. The reason incinerators were not advocated for houses for low income groups was that it was considered that a coke stove would be installed which would be capable of dealing with a good deal of refuse.

Mr. W. L. S. Spinks (Birmingham) proposed a vote of thanks to Mr. Rogers, and Mr. A. W. Attwood (Coventry) seconded.

Industrial Gas Installation Work*

By S. A. KING,

Tottenham and District Gas Company

HOW best can the work of installing industrial gas equipment and the accessories that go with it be carried out, and how, having established its satisfactory working, can continued use be assured by some efficient maintenance service? The degree to which these services are extended is entirely a question for each undertaking to decide, and the Author makes no attempt to define hard and fast recommendations to suit all sizes and types of industrial loads. Certain factors, however, from experience, prompt him to put forward suggestions which have proved of great assistance in taking business and in ensuring the continued revenue from it—a matter of vital importance if a stable industrial load is to be built up.

Few plant engineers, furnace builders, or apparatus manufacturers are in a position to offer an installation and maintenance service comparable with any which a local supply authority should be able to give. Service to the factory is of the utmost importance. Plant shut-down means loss of production, which in turn means loss of profit—a point on which we should never miss an opportunity, because it is one of the very good reasons why gas is used in many instances against lower production costs of competing fuels. The factory owner or engineer must be made aware of this, must be made to feel that if he is using gas plant he has the service of competent engineers and mechanics locally, ready to help him put in a good job and help him out of trouble if he strikes it. No amount of propaganda or advertising nationally or locally can get this aspect over effectively; it can only be done by example. Once get your foot into a factory and do a sound job there and you will have done more good by far than any long string of reasons why gas is the fuel to use. To take interest as far as the meter and leave the outlet to become anybody's business will yield no better return than it deserves. To extend good advice to the other side with nothing to back it up will bring in little more except some knowledge of what is being missed.

Factory engineers are busy people only too anxious to farm trouble and work out, and it is only by helping them that we help ourselves. A capable and reliable fitting and maintenance service is as essential to making the most of the industrial load as the supply of a uniform fuel under uniform conditions. How far this service goes and what work it is equipped to undertake is a matter of policy and opportunity, but in the Author's view the more complete it is and the nearer it comes to being able to give practical help to every piece of gas equipment, the greater will be the yield from industrial meters.

Cost of Service

That the cost of providing a well-equipped industrial fitting service means dilution of an already preferential price for gas is both uneconomic and unnecessary. Factory owners are prepared to pay for work done on their premises, and providing it is carried out efficiently a fair price can be charged for it to cover costs for labour, materials, and overheads. In assessing expenditure on industrial business some costs must, of course, be debited to the sale of gas—*i.e.*, those costs normally incurred in facilitating the sale of any product—but to augment those with heavily subsidized installation work results only in a higher price per therm or decrease in profits below the economic limit.

In planning an industrial installation and maintenance section it is as well to keep in mind the nature of the work involved, and to avoid the error of expecting to operate it with that clockwork precision of line production. Organizing and planning can make it efficient, but too rigid adherence to rules and set procedure is likely to result in loss of flexibility so essential to meet the many and varied demands made upon it. Sight should not be lost either of the fact that to undertake the general run of factory work with large size pipes and heavy apparatus requires a much wider range of tools and equipment than does average domestic work, and will need to be handled in a different manner. The very nature of its duties, the fact that it is carried out, not under one factory roof, but in the works of our customers spread possibly over a wide area, the necessity of transporting tools, equipment and fitters to the work, the limited times during which certain operations can be carried out to avoid a hold-up in production and the unavoidable interruption of sequence due to events of prior urgency, prevent plans operating in the systematic way we should like and tend to expect. Certain disorganization in any system is frequently necessary to give special service where it is urgently needed. The extra work and trouble involved are well worth while and bring their reward.

Just what sort of work an undertaking should be prepared to carry out for its factory consumers is a difficult question to answer. There are the extremes of stopping at the meter to building a factory to accommodate the gas-consuming plant. Where to strike the happy and most profitable medium is a point on which there exists wide diversity of opinions and practice, but we need only look into the activities of other large industries such as the transport, building, and raw materials concerns to show that they are prepared in many instances to go to great lengths in those directions to assist the expansion of their business.

The installation of most pieces of gas equipment generally does not resolve itself into a major operation with the accompanying machinery of architect, builders, and structural engineers engaged in its execution. The work of arrangement is normally the responsibility of works manager, plant engineer, or factory owner, who should be assisted in it as much as is in our power and interest to do. Take as an example the installation of an air blast gas furnace for a comparatively small firm not equipped to undertake the work themselves—and very few are—and see what a complex operation it can become. Furnace, reasonably easy to order direct from a reliable furnace firm; blower and motor, again easy to buy, but with a chance that they may not be suitable for the duty; gas supply, the gas company; air line, local pipe fitters; vent pipe, a firm of sheet metal workers, and a builder to cut the hole and fit a roof slate—four or five people, none of whom is qualified to give what the factory wants, which is a furnace fitted and left ready for operation in the most efficient and workmanlike way. Every one of us engaged in industrial work can probably recall many instances where good equipment has been found working unsatisfactorily due to faulty installation, and often the user is quite unaware of the reasons for it.

It may not be within the bounds of undertakings to carry out all that is involved in the installation of industrial apparatus with direct labour, but it is suggested that under the supervision of an industrial engineer the work can be subcontracted, for preference to local firms, with every good prospect of far more satisfactory results than are achieved by leaving factories to their own resources. A system of sub-contracting with local firms has the added advantage of mutual trading, and has obviously from that angle much to commend it.

Need for Careful Planning

There is some industrial work which it is incumbent upon the undertaking to carry out—the installation of services and meters, which serves invariably as a first practical introduction to our customer, and by it he will judge our capabilities. If we are equipped to plan

* Paper to the London and Southern District Junior Gas Association.

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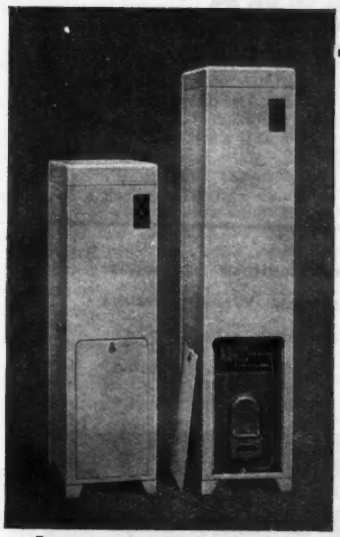

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and execute industrial gas engineering, then our advice and opinions are sought by those responsible for the design and planning of factories when projects are in the planning stage, and not afterwards when it may be too late to make our part in it all it should be. Service pipes, meters, and supply lines must be included in the planning, and not laid out anywhere and anyhow as an afterthought. The position of the service pipe, location and housing of a meter and run of supply pipes are engineering considerations worthy of any industrial architect's serious attention, and matters of considerable importance to us from more than one point of view. A service pipe as short and as straight as is practical is the scheme to aim for. It reduces our direct responsibility to a minimum and facilitates subsequent location, bringing the meter close to the factory boundary. It is impossible to adopt any standard, as factories differ so one from another, but to plan the meter position close to the boundary has much to commend it if only, among the many obvious practical advantages, to ease the work of the meter reader. To have proper and adequate accommodation provided for the meter is a consideration, the importance of which cannot be over-stressed. Quite apart from keeping the meter protected from the weather, a well-designed gas meter house properly laid out is a permanent compliment to our product, and the one part at least of every industrial installation for which we are directly responsible. Once installed it must not be left to become shabby and an eyesore. A clean down and a coat of paint annually will keep the meter externally in good condition, and in appearance worthy to measure a clean and efficient industrial fuel. Your factory owner may not see a half-page advertisement in the local paper, but his own gas installation he may see many times a day.

Example

The actual set-up of the installations and maintenance side of industrial work can only be determined by the requirements, such as the number of factories served, area covered, type of industries, and load, and no hard and fast stipulations can be made as to how best these conditions can be met, but the Author felt that a brief description of one method would indicate a workable system and would probably give rise to discussion of mutual advantage, because doubtless too little comparison of notes on subjects of this kind takes place within the industry.

The department described is one catering for some 800 odd factories and workshops carrying a normal peace-time load of about 1,000 million cu.ft., with a fair concentration of industry representing something like 80% of industrial sales within an area of 50 sq. miles and the remainder in a rural area of some 350 sq. miles. For the purpose of administering the fitting requirements it has been found advantageous to consider the whole area in these two parts, to deal with the former or concentrated area from one source and the rural area with labour from local fitting stations, unless the size of job warrants fitters being billeted local to the work. It is agreed that the service is not quite the same in both cases, but economic considerations make it impracticable to operate entirely from one centre.

The industrial fittings department is a more or less entirely separate entity from the undertaking's fitting sections and is equipped with its own store, workshop, and office. To avoid unnecessary duplication it has been arranged that the industrial store holds stocks for the remainder of the undertaking's distribution side of pipes and fittings of 2 in. size and over, below which the industrial store draws from the main store. To minimize redistribution charges, pipes of all sizes are delivered direct to store. Apart from pipes and fittings up to 6 in. size in sufficient stock to meet normal requirements, commodities in general use, such as steel sections, steel and copper sheet, burners, injectors, nozzles, governors, thermostats, relay valves, firebricks and general stores to meet the average run of work are held in stock. It is a problem to decide where to draw the line on the multiplicity of useful stock which could be held. The stores outlined holds sufficient stock to permit the normal run of industrial work to proceed with materials drawn from stock, to supply the requirements of the workshop in the construction of some special apparatus, burners, sheet metal work, stands, and pipefitter's specials, and to carry out at short notice normal repair work met with in the factories, including repairs and rebricking of the smaller sizes of furnace. In addition some stock of apparatus is held, space heaters, canteen appliances, tinmen's stoves, and those pieces of small equipment in continuous demand.

The department is staffed with an installations supervisor responsible for all inside and outside work, a district foreman—the contact man between outdoor fitting staff and management—storekeeper and assistant, workshop bench fitter, gas welder, tinsmith, and in the workshop office a draughtsman and a clerk. Outdoor staff, fitters and assistants and service men number about 30, whose transport requirements are met in a 15 cwt. truck, driver and mate. The actual method of carrying out work is a procedure common to most undertakings and need not be described in detail. Every effort is made to keep the contact between industrial engineer and fitter as close as possible through the installations supervisor—an important matter if work is to go through smoothly.

Considerable attention is paid to tools. Good work cannot be done without them or without the right tool for the job, and apart from a comprehensive kit to handle up to 2 in. pipe for each fitter, a well-equipped tool store provides most tools likely to be needed. Good dies, jacks and lifting tackle, trestles, boards and ladders, and special tools represent some considerable capital outlay, but the industrial fitter cannot do his work well unless he is provided with all the tools he needs. Remember our industrial customers know something of engineering, and will think poorly of our capabilities if we send ill-equipped craftsmen to do their work.

In addition to the facilities outlined, full use is made of local firms in constructional work, sheet metal work, and pipefitting when the quantity exceeds capacity. This, apart from taking up the unavoidable fluctuations in the quantity of work, avoids possible criticism of the undertaking by tradesmen likely to suggest that their legitimate business is being taken from them.

Generally the system operates satisfactorily, offers a fair service to industrialists, and is flexible in practice. It does not impose a heavy financial burden on the undertaking, neither does it show a handsome profit.

Maintenance

The natural corallory to a satisfactory installation service is an efficient maintenance service, the necessity for which there is little need to stress. That most of us would like to see some improvement in this part of the business is probably very true, and it presents problems both in practice and administration on which discussion should doubtless prove valuable. On some aspects agreement seems fairy general, on others opinions differ widely.

The aim to provide a maintenance service which really is a service is the general objective. To provide it efficiently with a capable staff and in such a way that it throws no burden of cost on the undertaking is the difficulty. Let us examine the last consideration first. If the price of gas sold to industry is to be determined on logical grounds, then there will be no margin for dilution by free or substantially below cost maintenance services. The value of free or subsidized maintenance as a selling point is doubtful. Industry is not accustomed to get anything for nothing, and is quite prepared to pay a fair price for satisfactory work. In the Author's view the work should be charged for in full with no concessions for anything or anybody. If this is the principle to work on, then our first consideration must be to see that the costs to our customer for maintenance are as low as they can be.

The first step towards this end should be taken before equipment is fitted by making every effort to see that the gas-burning apparatus installed in factories, by reason of being the best of its type and most suited to its duty, will require the minimum of maintenance in subsequent service. A common example of good equipment being put to duties for which it is unsuited is the use of instantaneous water heaters for industrial heavy duty work. The apparatus as such is sound, but its application to the strenuous work demanded of it in many factory installations results only in too frequent maintenance becoming necessary, and is unsatisfactory both to appliance maker and user.

The selection and training of fitters capable of efficient maintenance service is a subject worthy of serious consideration. Duties fall roughly into two categories, and differ a little in the grade of fitter required to fulfil them. There are the routine service necessary to maintain equipment in a high degree of efficiency and the fault-finding and correcting service. Training for the former is a straightforward matter requiring intelligence and complete understanding of gas equipment, recruitment for which can be made from the ranks of lower grade men who, with instruction, soon become efficient at their work. The complaint fitter needs to be of the highest grade, and in this respect we frequently differ from other engineering trades in which the service complaint fitter ranks higher than the fitter or erector from which work he has graduated. This seems to be a logical sequence, and one likely to give the customer that efficient service for which some engineering firms have earned themselves such good reputations.

Frequently within the Industry complaint work is looked upon as something necessary and desirable in order to sustain the gas load, but as work safely to be entrusted to fitters of the lower grades. The system of subsidized maintenance may have been an influencing factor in that costs appear a little lower than when top grade men are employed on the work, although in this as in many other instances there is little doubt that the best is the cheapest in the long run. If, on the other hand, the principle of full payment for service work is accepted, then the desirability of top grade fitters becomes an obligation.

Glasgow Gas Department Showrooms will shortly be featuring the Cadbury Bros., Ltd., and the Town and Country Planning Association sponsored exhibition entitled "When we Build Again." It was originally intended to have the exhibition on the premises of the Scottish Building Centre, Sauchiehall Street, but the floor space was found to be inadequate, so the help of the Gas Department was sought and secured.

A Meeting of the Plastics Group of the Society of Chemical Industry will be held on May 30 at 3 p.m. at the Royal Institution, Albemarle Street, S.W. 1, when Mr. H. V. Potter will deliver the first Baekeland Memorial Lecture entitled "Leo Hendrik Baekeland—the Story of His Life." The President of the Society, Prof. E. K. Rideal, F.R.S., will preside.

The London Market May 21.

As from March 5, by the Coal Tar Products Prices Order, 1945 (S. R. & O. 1945, No. 229), the maximum price of Pitch for briquetting has been increased to 60s. per ton f.o.r. supplying works, and the prices for Road Tar, as fixed by the Coal Tar Products Prices Order, 1943, S. R. & O. No. 1528, have been increased by one half-penny per gallon. There is also an increase of 5s. per ton in the price of standard Creosote/Pitch Mixture.

The prices of other products are unchanged.

Control of Benzole and Coal Spirit Order, 1944 (S.R. & O. 1944, No. 172), is in force.*

By this Order the price of Motor Benzole is fixed at 2s. per gallon. The Order also lays down the method of evaluating Crude Benzole, and calls for periodical returns to the Ministry of Fuel and Power from all producers of Crude and Refined Benzole.

Control of Toluene (No. 4) Order, 1944 (S. R. & O. 1944, No. 170), contains an amendment of the Control of Toluene (No. 3) Order, 1943.

There is also the Control of Benzole and Coal Spirit (No. 2) Order, 1944 (S. R. & O., No. 988).

Coal Tar Products Prices (No. 2) Order, 1944 (S. R. & O., 1944, No. 1051), allows increases in the maximum prices for all forms of Naphthalene.

* Slightly amended by Control of Benzole and Coal Spirit (No. 2) Order, 1944.

The Provinces May 21.

The average prices of gas-works products during the week were : Pitch and Crude Tar,* Toluole, naked, North, 90's. 2s. to 2s. 2¼d., pure, 2s. 9d. (now controlled by S. R. & O. 1944, No. 988, operative from Sept. 1, 1944. Benzole and Coal Spirit, also Coal Tar Naphtha and Xylole, are now controlled by the Control of Benzole and Coal Spirit Order, 1944, dated Feb. 18, 1944, S. R. & O. 1944, No. 172, operative from March 1, and S. R. & O. 1944, No. 988, part I, operative from Oct. 1, 1944, Carbolic acid, 60's, anthracene, creosote oil (hydrogenation), coal tar oils (timber preservation, &c.), and strained anthracene oil controlled by the Coal Tar Products Prices Order, 1943, dated Oct. 20, 1943 (S. R. & O. 1943, No. 1528), operative from Nov. 15, 1943, Naphthalene now controlled under S. R. & O. 1944, No. 1051, operative from Sept. 22, 1944.

Attention is called to Coal Tar Products Prices Order, 1945 (S. R. & O. 1945, No. 229), referred to on p. 305, "JOURNAL" of March 7.

* In regard to pitch and crude tar prices we would ask readers to refer to the editorial note on p. 396 of the "JOURNAL" for Sept. 10, 1941.

Scotland May 19.

Home market is active, but export is still difficult. Refined tar* : Yield to Distillers is 5d. per gallon *ex* Works, naked. Creosote oil : Timber preserving quality,* 5½d. to 6½d. ; hydrogenation oil,* 5⅞d. ; low gravity or virgin oil,† 7½d. to 7¾d. ; benzole absorbing oil,* 6½d. to 8d. per gallon. Refined cresylic acid* is 3s. 6d. to 4s. 6d. per gallon *ex* Works, naked, according to quality. Crude naphtha† ; 6½d. to 7d. per gallon. Solvent naphtha* : Basic prices delivered in bulk, 90/160 grade, 2s. 8d., and 90/190 Heavy naphtha, Unrectified, 1s. 10½d. ; Rectified, 2s. 2d. per gallon. Pyridine† : 90/160 grade, 13s., and 90/140 grade, 15s. per gallon.

* Price controlled. † Uncontrolled.

There was an increased demand for British Funds at the opening last week and the Kaffir Market was also the scene of greater activity, but this eased off on the eve of the Whitsun holiday, and markets closed quiet though steady.

The Gas section was fairly well supported and prices on the whole remained firm. The feature of the week was the sharp rise of 17 points in Imperial Continental ordinary stock on the dividend announcement. The directors propose to distribute 3½%, plus a special dividend of 6½%, a total of 10% for the year to March 31 last. Further details are given elsewhere in this issue. The Stock closed on Thursday last at 134½ and was changing hands up to 135.

The following few price changes were recorded during the week :

OFFICIAL LIST

Gas Consolidation "A"	22/3—23/3	—/3d.
Gas Light & Coke 3½ p.c. Red. Pref.	101½—104½	+½
Imperial Continental	132—137	+17
Liverpool Ord.	127—130	+1
South-Eastern Gas Corporation Ord. (x.d.)	22/3—23/3	May 14
South Metropolitan Ord.	93—95	—1
United Kingdom Gas Corporation 4½ p.c. 1st Cum. Pref. (x.d.)	23/—24/—	May 14
Ditto 4 p.c. 1st Red. Cum. Pref. (x.d.)	19/—21/—	"

SUPPLEMENTARY LIST

Tottenham 5 p.c. Reg. Red. Mortgs.	100—103	+1½

Address your orders and enquiries for
HUMIDINE
The unique anti-corrosion paint for gasholder cuppings, etc.
To the sole manufacturers
ASPINALLS (PAINTS) LIMITED
CARLETON — SKIPTON — YORKS

TOM CARRINGTON & CO. LTD.
Lyndon Toolworks, West Bromwich. T/N 0517 (2 lines).
"LYNDON" and "EGA-KUT"
SCREWING TOOLS;
TAPS; DIES; STOCKS AND DIES;
GROUND THREAD TAPS

HENRY BALFOUR & CO. LTD.
GAS, CHEMICAL and GENERAL ENGINEERS and IRONFOUNDERS,
Durie Foundry, LEVEN, Fife.
T/A Foundry, Leven, Fife. T/N Leven 79 (4 lines).

HILMOR LTD.
Tube Bending Machines (Hand and Power). Tube Bending Specialists.
Temporary Offices: London Road, Knebworth, Herts. T/N Knebworth 3179.
We can supply machines for bending Gas and Steam Piping from ¼ in. to 2 in. in the cold state.

Arkon
INSTRUMENTS
Gas Flow Recorders and Indicators
Pressure and Vacuum Recorders and Indicators
Full Scale or Inclined Gauges
WALKER, CROSWELLER & CO. LTD.
CHELTENHAM, GLOS. Cheltenham 5172

BRITISH VACUUM CLEANER AND ENGINEERING CO. LTD.
Leatherhead - Surrey
Ashtead 866.
VACUUM CLEANING EQUIPMENT FOR GAS WORKS.

DRAKES LTD.
Halifax, Yorks. T/N Halifax 4701 (P.B.X.). T/A Draketed, Halifax.
Specialists in Gas-Works Plant for ensuring Greater Make, Higher Quality By-Products, Lower Maintenance Costs, Wide Flexibility and Continuity of Output.

GRIFFITHS BROS. & CO. LTD.
Mack's Road, Bermondsey, London, S.E. 16. T/N BERmondsey 1151. T/A London Aquol Phone, London.
Paint, Enamel and Insulating Varnish Specialists. "FERRODOR" Metal Protection for protecting Gasholders and other Structural Works from the ravages of Corrosion.

ALEXANDER WRIGHT & CO. LTD.
1, Westminster Palace Gardens, London, S.W. 1. T/N ABBey 2207. T/A Precision, Sowest, London.
Gas Calorimeters, Gravitometers and Gas Density Recorders, Aeration Test Burners, Gauges and Recorders, Wet Meters, Gas Analysers Photometers, Thermometers.

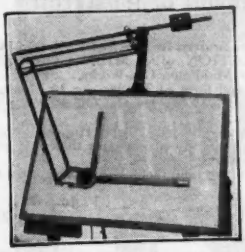
A. H. WILKES & COMPANY.
(Proprietors Wm. Allday & Co. Ltd.)
Head Office: 38a, Paradise Street, Birmingham 1.
Manufacturers of a wide range of specialized industrial gas appliances. "WILKES" soldering and brazing equipment. Blowers, Burners, Fans, Furnaces, for many specialized duties. Enquiries invited.

PECKETT & SONS LTD.
Atlas Locomotive Works, St. George, Bristol 5. T/N Fishponds 53006. T/A Peckett, Bristol. London Representatives: Ferguson & Palmer, 9, Victoria Street, S.W. 1.
LOCOMOTIVE ENGINEERS.

DONKIN
COMPRESSORS, EXHAUSTERS, VALVES, GAS GOVERNORS & REGULATORS, BOOSTERS.
The BRYAN DONKIN Co. Ltd., Chesterfield

AUTOMATIC LUBRICATION WITH MENNO CUPS
SAFEGUARD MACHINERY BEARINGS
MENNO CUPS ensure Constant Reliable Running, Economy in Maintenance, and Save Time in Attention. Simple to Fit and Operate.
The MENNO COMPRESSED AIR GREASECUP CO. LTD.
Leeds Place, Tollington Park, London, N.4.
Telephone : Archway 1786. Telegrams : "Agreascup, London."
SPECIFY MENNO CUPS FOR LUBRICATION

"MAVITTA" DRAFTING MACHINES



MACHINES FOR ALL BOARDS

PERFECTLY BALANCED TABLES

ENTIRELY BRITISH

THE MAVITTA DRAFTING MACHINES LTD.
ANCHOR WORKS, PARK ROAD, BIRMINGHAM, 6
Telephone: EAST 0482. Telegrams: MAVITTA, BIRMINGHAM

COMPRESSORS & EXHAUSTERS
FOR AIR AND GAS.

See our Advertisement Next Week.

REAVELL & CO. LTD. IPSWICH.

ERECTION WORK

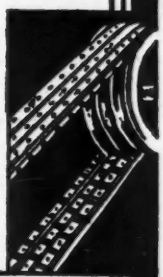
GAS HOLDERS. OIL TANKS. STEEL BUILDINGS. CAST IRON TANKS. PURIFIERS. MAIN LAYING. PAINTING.
Sub-Contractors for any Erection Work,
REPAIRS, RE-SHEETING, DISMANTLING, & RE-ERECTION INSPECTIONS.
S. CROOKSTON & CO.
Contractors
GREATWORTH, BANBURY, OXON.

DICK'S DRIVES

DEPENDABLE AND EFFICIENT

DICK'S ORIGINAL BALATA BELTING: The first and still the best.

DIXEL ROPES: The super drive, V-section.
RUBERIX: The belt with great gripping properties.
DICKROPE: The long life Vee Rope.



R. & J. DICK, LTD.
GREENHEAD, GLASGOW, S.E.

And at LONDON; BRISTOL; BIRMINGHAM; LEEDS; MANCHESTER; NEWCASTLE; BELFAST; DUBLIN and DUNDEE.

"KLEENOFF"
—THE COOKER CLEANER
Tins for Sale to Consumers. In Bulk for Works Use

OXIDE OF IRON.
SPENT OXIDE BOUGHT.

BALE & CHURCH, LTD.
33, ST. MARY AT HILL, LONDON, E.C.3.
Telephone: Mansion House 1154. Telegrams: "Balefire, London."

TROTTER, HAINES & CORBETT LIMITED
FIRE-CLAY & BRICKWORKS
STOURBRIDGE

GAS RETORTS in BEST STOURBRIDGE QUALITY also SILICIOUS QUALITY 81% SILICA

HIGH GRADE INSULATING QUALITY FIREBRICKS

REGENERATIVE TUBES & TILES

IRISH BOG ORE
Porous and Light
Easy to Work
A War Time Economy of Labour

HARRISONS (LONDON) LTD.
66, MARK LANE, LONDON, E.C. 3
Telegrams: "BIRCHROCK, LONDON." Telephone: ROYal 3120

APPOINTMENTS VACANT

No. 9397.

WELL-KNOWN Firm of By-product and Chemical Engineers wish to THANK all those who replied to their advertisement and to inform them that the positions offered HAVE NOW BEEN FILLED.

SKEGNESS URBAN DISTRICT COUNCIL

(GAS DEPARTMENT)

SALES SUPERINTENDENT

APPLICATIONS are invited for the appointment of SALES SUPERINTENDENT in the Council's Gas Department. The Salary payable will be in accordance with the East Midlands Provincial Council Salary Scale (Grade F) with a minimum of £280, rising by annual increments of £15 to a maximum of £370 per annum, but the commencing figure will be fixed in conformity with the qualifications and experience of the person appointed. A temporary cost-of-living bonus is also payable in addition to the salary, at present amounting to £59 16s. per annum.

The person appointed will be required to take charge of the Gas Showrooms. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the selected candidate will be required to pass a medical examination.

Other things being equal, preference will be given to an applicant who is an ex-Serviceman.

Applications, stating Age, Qualifications, present appointment and duties and full details of Experience, together with information as to position in relation to National Service and Essential Works Order, must be delivered to the undersigned, accompanied by *copies* of two Testimonials, not later than Monday, June 4, 1945.

Town Hall, Skegness.
IVOR M. CULE, Clerk to the Council.
May 10, 1945.

BILSTON GAS LIGHT AND COKE COMPANY, LIMITED

WORKS YARD FOREMAN

APPLICATIONS are invited for the Position of WORKS YARD FOREMAN. State Age, previous Experience, present position, Salary required, and when able to commence duties.

Applications should be accompanied by *copies* of two recent Testimonials and addressed to the undersigned, to be received not later than May 28, 1945.

Gas-Works, Bilston, Staffs.
K. L. PEARCE, Engineer and Manager.

BRISTOL GAS COMPANY invites applications for the Position of ENGINEER AND GENERAL MANAGER shortly to be vacant. Applicants should be between 35 and 45 years of age, and they must possess suitable Technical and Administrative Qualifications. Salary will be according to Qualifications.

Applications, giving full particulars of Age, Qualifications and Experience, together with Salary required, and accompanied by not more than three recent Testimonials, to be addressed to The Chairman, Bristol Gas Company, Radiant House, Bristol, 1.
May 10, 1945.

WANTED.—Experienced GASFITTER. Present rate 1s. 10.78d. per hour, with overtime above 47 hours per week. Permanency for suitable man. House available.
Apply Gas-Works, Church, Lancs.

COUNTY BOROUGH OF WARRINGTON

(GAS DEPARTMENT)

DISTRIBUTION SUPERINTENDENT

APPLICATIONS are invited from suitably qualified persons for the appointment of DISTRIBUTION SUPERINTENDENT to the Gas Undertaking.

The appointment, which will be terminable by three months' notice on either side, will be subject to the provisions of the Local Government Superannuation Act, 1937, and the selected person will be required to pass a medical examination.

Applicants must possess the Higher Grade Certificate of the Institution of Gas Engineers in Gas Engineering (Supply) or equivalent, and have had sound experience in the Distribution and Sale of Gas which should, in particular, cover the use of Gas in the industrial field. Applicants must be well versed in all modern distribution problems, and be experienced in the organization and control of men.

The commencing Salary, to be determined upon appointment, will be within the scale £500—£50—£600 per annum, plus War Bonus, at present amounting to £59 19s. 3d. per annum.

Applications, stating Age, Qualifications, Training and Experience, accompanied by not more than three recent Testimonials, should be sent to the undersigned, endorsed "Distribution Superintendent," so as to be received not later than the first post on Wednesday, May 30, 1945.

Applicants should state their position under the Essential Works Order, and should indicate how soon they anticipate they could secure their release to take up the new appointment.

Canvassing will disqualify, and candidates, when making application, must disclose in writing whether to their knowledge they are related to any member of the Council, or any co-opted member of a Committee or any official of the Council.

Gas Department, Mersey Street, Warrington.
JOHN E. WAKEFORD, Gas Engineer and Manager.

APPOINTMENTS VACANT (*continued*)

COUNTY BOROUGH OF MIDDLESBROUGH

(GAS DEPARTMENT)

APPLICATIONS are invited for the Position of INDUSTRIAL GAS ENGINEER, at a Salary of £440 rising by annual increments of £20 to £500, plus cost of living bonus, at present amounting to £59 16s.

Candidates must have a sound experience in the design, installation, and maintenance of Industrial Gas Equipment, particularly of central heating and bakers' oven installations with automatic control equipment, and the conversion of such installations from solid fuel to gas.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a Medical Examination.

Applications, giving Age, full particulars of Training, Experience, present position, and Qualifications, and stating position under the Essential Works Order and in regard to Military Service, and endorsed "Industrial Gas Engineer," are to be sent to the undersigned, accompanied by *copies* of not more than three Testimonials, not later than 9 a.m. on Wednesday, May 30.

Corporation Gas-Works, Commercial Street, Middlesbrough.
JOHN W. PALLISTER, M.Inst.C.E., M.Inst.Gas E., A.M.I.Struct.E., Gas Engineer and Manager

URBAN DISTRICT COUNCIL OF NEW HUNSTANTON

GAS AND WATER ENGINEER AND MANAGER

APPLICATIONS are invited for the appointment of GAS AND WATER ENGINEER AND MANAGER at a Salary in accordance with Grade "C" and the conditions of the Eastern District Provincial Council for Local Authorities' Administrative, Technical, Professional and Clerical Services, the salary fixed by Grade "C" being £365 per annum by £15 to £410 plus cost-of-living bonus, at present £59 16s. per annum.

The appointment, which will be determinable by three months' notice on either side, is subject to the provisions of the Local Government Superannuation Act, 1937, and the selected applicant will be required to pass a medical examination.

Applications, stating Age, Qualifications and Experience, accompanied by *copies* of not more than three recent Testimonials, must be delivered to the undersigned endorsed "Gas and Water Engineer" not later than noon on June 23, 1945.

Canvassing, directly or indirectly, will be disqualification.

Council Offices, Hunstanton, Norfolk.
W. H. BEHN, Clerk of the Council.
May 18, 1945.

SIX fully qualified experienced GASFITTERS and one METER REPAIRER are required by the Port Talbot Corporation Gas Department.

Wages : 95s. 3d. per week of 47 hours.

Apply, stating Age, Experience, and position in respect of National Service to the Engineer and Manager, Gas Offices, 18, Station Road, Port Talbot.

PLANT &c. FOR SALE & WANTED

'PHONE 98 STAINES.

FOR SALE.—Cylindrical Receiver 30 ft. by 7 ft. dia.; 100 lb.; Cornish Boiler, 3,300 lb., evaporation 140 lb. w.p.; Weir Feed Pump 8¼ in. by 6 in. by 13 in.; Weir Feed Pumps (2) 5 in. by 3 in. by 6 in.; Weir Service Pump 6,300 g.p.h.; 7 h.p., 25 h.p., and 40 h.p. Crosley Gas Engines; Tangye 3-Throw Ram Pump 5 in. by 8 in.

HARRY H. GARDAM & CO., LTD., STAINES.

ANVILS. New, All-steel, London Pattern, for sal from stock. In sizes 28 lb. to 3¼ cwt. Very keen prices. Ask for leaflet.

GEORGE COHEN, SONS & CO., LTD., Wood Lane, London, W. 12. Telephone: Shepherds Bush 2070.

FOR SALE.—Naphthalene CONDENSER SHELL by Cutler, about 5 ft. 3 in. by 5 ft. 3 in. by 22 ft., for prompt delivery complete with tube plates. MAYER, NEWMAN & CO., LTD., 15, Arundel Street, London, W.C.2.

CONTRACTS OPEN

BOROUGH OF MIDDLETON

(GAS DEPARTMENT)

TENDERS are invited from competent painting contractors for the PAINTING of a M.A.N. WATERLESS GASHOLDER at the Middleton Gas-Works.

Specifications and Forms of Tender may be obtained on application to the Gas Engineer, Gas Offices, Long Street, Middleton, Lancs.

Sealed Tenders endorsed "Gasholder Painting" must be delivered to the undersigned not later than first post on Saturday, June 16, 1945.

The Council do not bind themselves to accept the lowest or any Tender.

Town Hall, Middleton, Lancs.
F. JOHNSTON, Town Clerk.
May 15, 1945.

CONTRACTS OPEN (*continued*)

BOROUGH OF MIDDLETON

(GAS DEPARTMENT)

TENDERS are invited for the SUPPLY, DELIVERY and ERECTION of a MILD STEEL COKE HOPPER at the Middleton Gas-Works.

Specification and form of Tender can be obtained on application to the Gas Engineer, Gas Offices, Long Street, Middleton, Lancs.

Sealed Tenders endorsed "Coke Hopper" must be delivered to the undersigned not later than first post on Saturday, June 16, 1945.

The Council do not bind themselves to accept the lowest or any Tender.

Town Hall, Middleton, Lancs.
F. JOHNSTON, Town Clerk.
May 15, 1945.

SIDMOUTH URBAN DISTRICT COUNCIL

(GAS DEPARTMENT)

TENDERS are invited for the Supply and Delivery of 7,200 yards of 10 in., 8 in., 6 in., 4 in., and 3 in. CAST IRON SPUN PIPES AND SPECIALS. Particulars can be obtained from the Engineer and Manager, Gas-Works, Sidmouth.

Sealed Tenders in plain envelopes endorsed "Gas Mains" to be delivered to the undersigned not later than noon on Saturday, June 16, 1945.

The lowest or any Tender will not necessarily be accepted.

Council Offices, Sidmouth.
R. PICKARD, Clerk of the Council.
May 17, 1945.

SIDMOUTH URBAN DISTRICT COUNCIL

(GAS DEPARTMENT)

TENDERS are invited for EXCAVATING and the LAYING of 7,200 yards of 10 in., 8 in., 6 in., 4 in., and 3 in. CAST IRON GAS MAINS AND SPECIALS. Particulars can be obtained from the Engineer and Manager, Gas-Works, Sidmouth.

Sealed Tenders in plain envelopes endorsed "Laying Gas Mains" to be delivered to the undersigned not later than noon on Saturday, June 16, 1945.

The lowest or any Tender will not necessarily be accepted.

Council Offices, Sidmouth.
R. PICKARD, Clerk of the Council.
May 17, 1945.

COMPANY NOTICE

THE GAS LIGHT AND COKE COMPANY

3% CONSOLIDATED DEBENTURE STOCK.
4½% REDEEMABLE DEBENTURE STOCK.
5% REDEEMABLE DEBENTURE STOCK.

NOTICE IS HEREBY GIVEN that the TRANSFER BOOKS of this Company, so far as they relate to the above-mentioned DEBENTURE STOCKS, WILL BE CLOSED at 4 p.m. on the 1st June, 1945, for the half-year ending on the 30th June, 1945, and WILL BE RE-OPENED on the morning of the 2nd June, 1945.

Chief Office: 30, Kensington Church Street, W. 8.
By Order, BRIAN WOOD, Secretary.
May 17, 1945.

REPAIR WORK

CLOCKWORK Controllers for Public Lighting; Control and Time Switches, Clocks, Electric Clocks, Exposure Meters and every kind of Clockwork Appliance repaired and overhauled. Inquiries welcomed.

J. W. & R. E. HUGHES (Clockwork Engineers), 58, Victoria Street, London, S.W. 1. 'Phone Victoria 0134.

60% Sulphur absorbed by our

OXIDE

which has stood the test of 60 years.

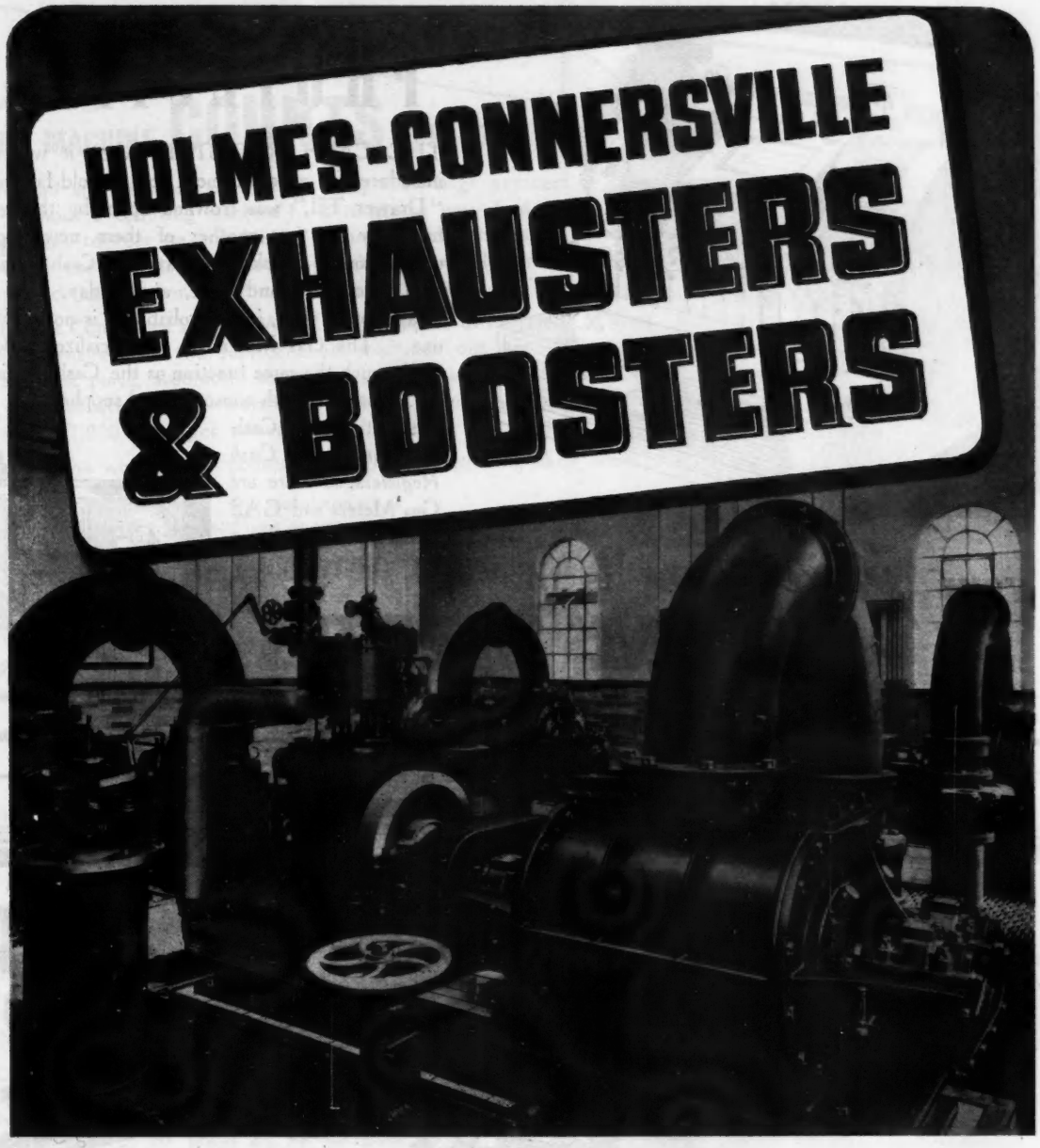
Minimum Costs, Highest Efficiency

ESTABLISHED 1873

GAS PURIFICATION & CHEMICAL COMPANY LIMITED

PALMERSTON HOUSE, 34, OLD BROAD STREET LONDON, E.C.2.

Telegrams : "Purification, Stock, London." Telephone : London Wall 5077



have stood the test of time and give the maximum of efficiency with the minimum of attention.

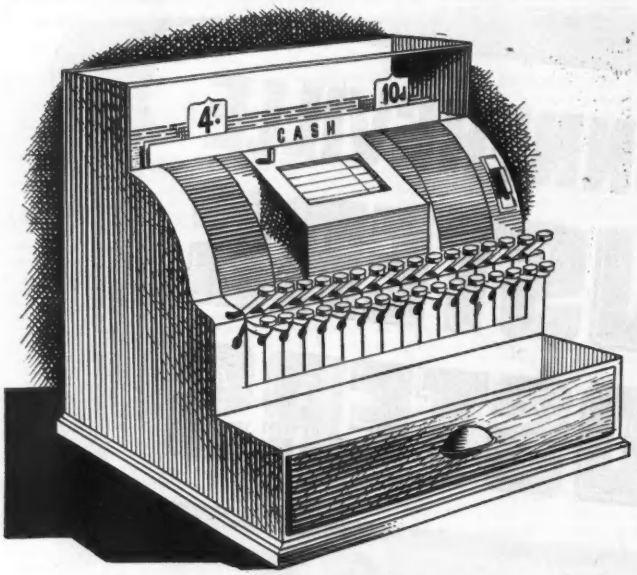
Illustration shows an Exhausting and Boosting installation at a Midlands Gasworks, which has run continuously for a period of ten years without overhaul.

HEAD OFFICE • TURNBRIDGE • HUDDERSFIELD

LONDON OFFICE: 119 VICTORIA ST. SW1 • MIDLANDS OFFICE: 21 BENNETTS HILL BIRMINGHAM 2

Telephones: Huddersfield, 5280 • LONDON, Victoria, 9971 • BIRMINGHAM, Midland, 6830

C 224



PROTECTION..

THE CASH REGISTER, when it was first introduced as a replacement for the old-fashioned "Drawer Till," was frowned upon by the retail fraternity as "just another of them new-fangled contraptions." Quickly, however, the Cash Register won recognition and fame, and to-day, even the village corner shop, in all probability, is not without one. The Gas Meter—in its specialized field—fulfils much the same function as the Cash Register . . . it protects both consumer and supplier . . . but just as there are Cash Registers and *Cash Registers*, so there are Gas Meters and GAS METERS.

your *protection* is the

"A&M" METER

ALDER & MACKAY LTD., NEW GRANGE WORKS, EDINBURGH, 11.

PUMPS

FOR GAS WORKS

Fig. 705. "SINGLE-RAM" STEAM-PUMP.

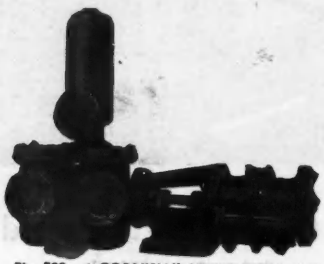


Fig. 598. "CORNISH" STEAM-PUMP FOR BOILER FEEDING, &c.

TRADE MARK

Fig. 712. "DOUBLE-RAM" STEAM-PUMP.

Fig. 680. "RELIABLE" PUMPING ENGINE FOR THIN TAR, AMMONIACAL LIQUOR, BENZOLE LIGHT OILS AND WATER.

Fig. 695. "RELIABLE" STEAM-PUMP FOR TAR AND ALL THICK FLUIDS.

Please apply for Catalogue No. 8.

JOSEPH EVANS & SONS (WOLVERHAMPTON) LTD

Wires: "Evans, Wolverhampton." **CULWELL WORKS, WOLVERHAMPTON.** 'Phones Wolverhampton 20864, 20865

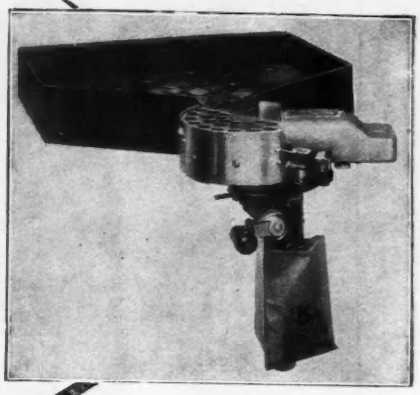
London Office: KERN HOUSE, 36 & 38, KINGSWAY, W.C.2. Wires: "Dryosbo, Westcent." 'Phone: Holborn 1091.

THIS MACHINE COUNTS FOR YOU!

How can any business which deals daily with large numbers of coins do without a counting machine? Is it fair to your business or your employees to rely on the human element when thousands of coins must be counted daily? Could not that human element be better employed doing other and more important work?

Many Gas Companies and the Wages Departments of hundreds of firms depend entirely on the service these machines can give. They are, in the first place, absolutely accurate . . . they stop automatically on £5 worth of silver and 5/- worth of copper . . . and they count at the rate of a 1,000 coins per minute.

All over the world these counting machines are proving their worth.



Also manufacturers of
ENVELOPE OPENING and ENVELOPE SEALING MACHINES

INTERNATIONAL COIN COUNTING MACHINE CO. LTD.
COLLEGE ROAD, CHESHUNT
Phone: Waltham Cross 3241–2

Indications are abundant that Pressure-Loading will, in the post-war period, be the standard method of regulating Station and District Governors. With the higher gas pressures especially the advantages of Pressure-Loading are overwhelming.

Control is effected by a small pilot governor, using the inlet pressure regulated by tiny weights; a vastly better method than the heavy cumbrous weights which have to be lifted on or off weight-loaded governors every time changes in the loading are needed. We supply

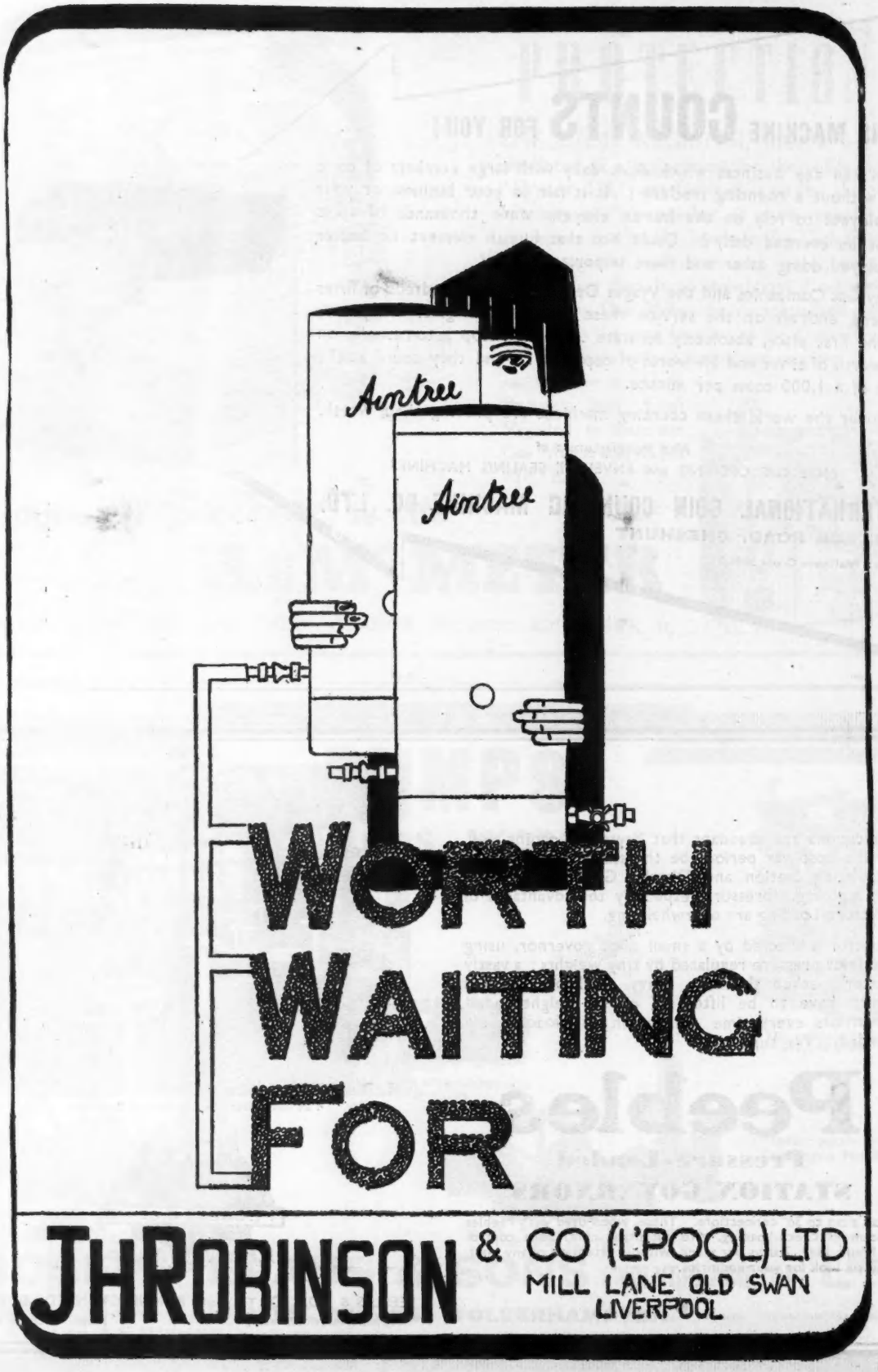
Peebles
Pressure-Loaded STATION GOVERNORS

in all sizes to 36" connections. These, when used with Peebles system of Clock-Loading, give automatic continuous control 24 hours daily, 7 days per week, without attention of any kind. May we look for your enquiries.

Fig. 323

4 24" Gas-Loaded Peebles Station Governors.

PEEBLES & CO. LTD., Tay Works, BONNINGTON, EDINBURGH
Telegrams: Tangent, Edinburgh *Telephone:* LEITH 36544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WORTH
WAITING
FOR
JHROBINSON & CO (L'POOL) LTD
MILL LANE OLD SWAN
LIVERPOOL

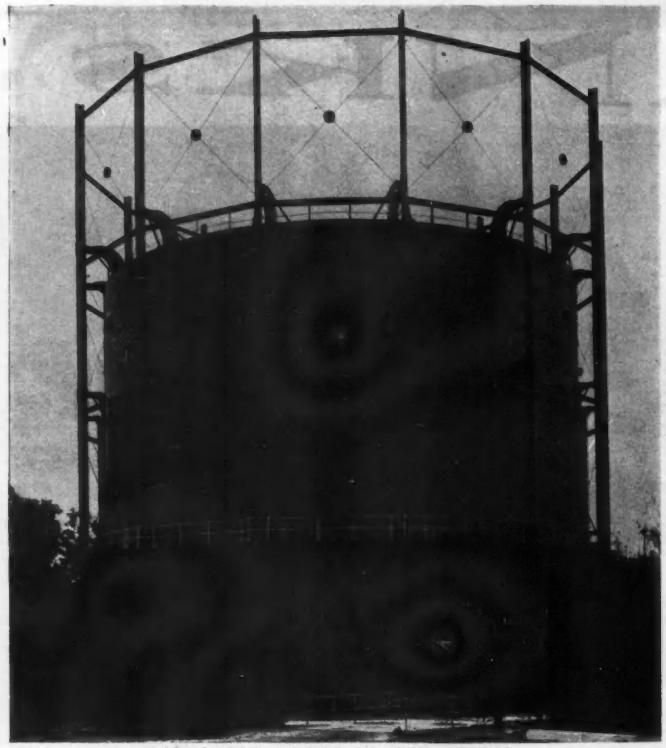
TANKS.

Seven storage tanks of welded construction, each 10,000 gallons capacity, 8 ft. 6 in. diameter, 30 ft. long, against one contract. Our Steel Constructional Department offers you expert advice and service on all constructional problems.

WIDNES FOUNDRY & ENGINEERING CO LTD

Specialists in all types of Pre-fabricated Steelwork and Tanks

WORKS: WIDNES, LANCS London Brettenham House W.C.2 Temple Bar 9361



AT A GAS WORKS IN THE SOUTH.

WALKER

R.S.J.

GUIDE FRAMING

IS

ECONOMICAL

IN

CONSTRUCTION

AND IN

MAINTENANCE

GASHOLDERS RIVETED OR ELECTRICALLY WELDED

C. & W. WALKER,

LTD.,

DONNINGTON,

Nr. WELLINGTON — SHROPS.

'Phone: Wellington-Shropshire 12

'Grams: "Fortress," Donnington, Shropshire

LONDON OFFICE Temporary Address: DONNINGTON, WELLINGTON, SHROPSHIRE

GAS METERS

for

INDUSTRIAL ESTABLISHMENTS

made to any capacity required.

WILLEY & CO. LTD

EXETER

WRITE FOR CATALOGUE 111.

WALKER'S LION PACKING

PACKINGS & JOINTINGS

• WE SOLVE MODERN PACKING & JOINTING PROBLEMS — IT IS OUR SOLE BUSINESS •

JAMES WALKER & Co. LTD.

"LION" WORKS, WOKING, SURREY, ENGLAND.
Phone: WOKING 2432 'Grams: "LIONCELLE."

4-LIFT SPIRAL GUIDED GASHOLDER—Capacity 4,000,000 Cubic Feet.

GASHOLDERS AND TANKS OF ANY SIZE AND DESIGN

FRAME GUIDED SPIRAL. WATERLESS
(M.A.N. PATENTS)

LONDON OFFICE:
2, VICTORIA ST.
S.W.1.

PURIFIERS, STRUCTURAL STEELWORK
WELDED AND RIVETTED STEEL PIPES, BOILERS

CLAYTON SON & Co. LD., MOOR END, HUNSLET, LEEDS

6, 8, 10 and 12 lb. Laundry Hand Irons
30 lb. Jumbo Irons
12, 14, 16 and 18 lb. Tailors' Goose Irons
2 lb. Polishing Irons
Gas Iron Stands, Fitting Equipment and Pea Jets for lighting.

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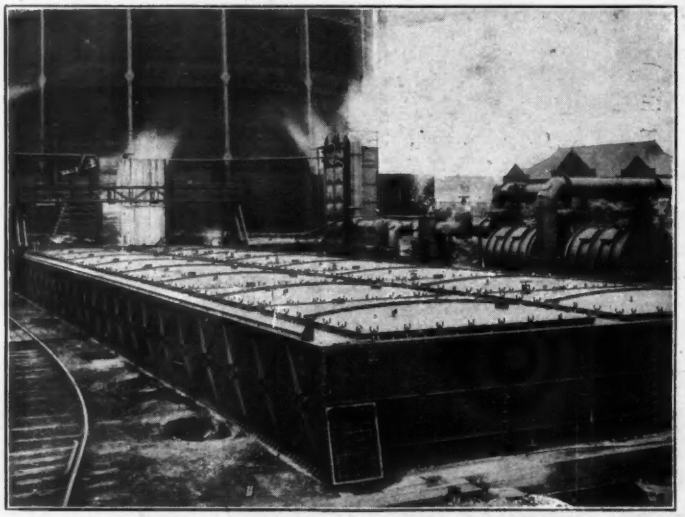

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